Clinical Lecture
ON
SOME CASES OF CHRONIC TUMOUR OF THE BREAST.

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BY WILLIAM H. BENNETT, F.R.C.S. ENG.,
SURGEON TO THE HOSPITAL.

GENTLEMEN,—Some of you may perhaps recollect having seen me remove about a fortnight ago a small tumour from the breast of a patient in the Cholmondeley ward, who was about forty years of age. At first sight there appeared to be nothing very interesting about the case. The tumour was a small mass which lay in the substance of the left breast, where it had been discovered quite by accident several months before; no notice had been taken of the matter until a month before the patient's admission, when it had commenced very distinctly to increase in size. The removal of the little lump proved to be rather more difficult than it originally seemed likely to be, because it was closely connected with the breast tissue about it, although before removal it seemed to be perfectly loose as it rolled about, apparently just beneath the skin. In removing it, not only was it necessary to cut through a thickish layer of breast tissue, but in consequence of a hard process which passed from the tumour into the adjacent part of the breast some of the latter structure had to be taken away with it. The wound was sewn up with horse-hair in the ordinary way, and the patient recovered in a few days. The tumour proved upon examination to be an adeno-fibroma, that is to say, it was partly composed of gland tissue, resembling to some extent the mammary gland itself, and partly of fibrous tissue, the latter being greatly in excess. The tumour possessed, however, one peculiarity—viz., that the most recent part of it, that part, in fact, to which its increase in size had obviously been due, presented characteristics hardly distinguishable from sarcoma: a condition which, had I recognised it at the time of the operation, would certainly have led me to remove the whole breast instead of performing the partial operation.

As a contrast to the above let me mention a case upon which I have recently operated in private practice. As a rule I avoid mentioning in these lectures cases which occur in private practice because I think it better in a general way to refer only to those occurring in the hospital wards, which some at least of you have seen; but this particular case is such a good contrast to the other that I will briefly describe it.

The patient was a lady about forty years of age. She had a tumour apparently precisely similar to the one already mentioned so far as the external aspect was concerned; the mass was hard, elastic, somewhat irregular in shape and rolled about under the skin. In the removal of this tumour no breast tissue was incised, for upon cutting through the skin nothing lay over the mass but a thin layer of fibrous tissue, which formed, in point of fact, the capsule in which it was. Upon opening this capsule and making a little pressure the tumour slipped out, as it was not at all connected with the breast itself and indeed was perfectly free save that it was anchored to the bottom of the capsule by a single strand of fibrous tissue. This tumour proved to be an adenoma—that is to say, it was composed almost entirely of glandular tissue, closely resembling the mammary gland itself. The absence of any direct connexion between this tumour and the breast and the great preponderance of gland tissue are the two points in which it contrasts so strongly with the mass in the other case. These tumours, the adeno-fibromata and the adenomata, are classed as innocent and harmless growths, and harmless enough they may in themselves be, provided that no evil change comes over them. As a rule they are discovered by the patient quite accidentally, so that the time during which they have been in existence is generally doubtful. They may remain unchanged in size for years, causing no inconvenience, excepting, perhaps, at the menstrual epochs, when they may temporarily swell a little and become sensitive, participating, in fact, at such times in the general condition of the mamma itself. Usually if a patient consults a practitioner about a tumour of this kind she is told that so long as no increase in size or discomfort occur no anxiety need be felt, and she is advised to leave the "lump" to itself unless some change occurs in it. This advice is, I believe, the worst that the patient can be offered, for reasons which I hope I shall be able to make plain presently. It is, I suppose, hardly necessary to remind you that these growths never arrive at a perfect state of natural development. However pure the adenoma may be, you may be absolutely certain that it will never reach the perfect type of development attained by the mammary gland. This fact applies even more forcibly in the case of the adeno-fibromata, which never arrive at anything at all approaching the perfect type. Following upon this comes another fact which is undeniable—viz., that whenever a tissue found in any part of the body (especially if connected with the secreting glands) is foreign to the part in which it lies—as these tumours are, for instance, foreign to the natural breast—and does not arrive at a perfect state of development, this abnormal tissue is more liable to degenerate and tends more to erratic growth than any structure of a perfectly normal type. In other words, these tumours occurring in connexion with the normal breast are more liable to degenerate and change their shape and character erratically than the breast itself, mainly because they are imperfectly developed and have an unfortunate inclination, like all products of this kind, to revert to a certain extent to the embryonic type in their growth. Granting these points, as may safely be done, we come to another stage of the question. Malignant disease, carcinoma or sarcoma, is unhappily common in the female breast, and you are aware that its occurrence is generally supposed to be, to some extent, influenced by hereditary causes. I know that this point is, to a certain degree, disputed by some; but, at least, we generally understand that, all other things being equal, a person having ancestors who have suffered from cancer is more likely to be afflicted with that disease than one whose progenitors have been perfectly free from the cancer taint. So far we may go without much fear of contradiction. Now, these mammary tumours, whether they be of the nature of an adeno-fibroma or pure adenoma or any other growth of an originally innocent kind, constitute really (if what I have said about their defective development is true) weak points in the mammary apparatus. Seeing how prone the mammary gland is to become the seat of malignant disease, it follows logically that a patient who has in the mammary gland a tumour of this sort would be more likely to suffer from malignant disease than one whose breast is normal, because of the existence in the mammary apparatus of a weak point, more liable to retrogress, more liable to change and erratic growth than the healthy gland itself. Again we may go still further and say, if what has been already stated is correct, that a person having a chronic mammary tumour, however innocent it may in itself be, whose ancestors have exhibited the cancer taint, would be more likely to suffer from malignant disease than one who had no such tumour. Further, it ought to follow almost as a matter of course that if malignant disease should attack the breast of a patient who has one of these tumours the disease should begin in the tumour and not in the healthy breast tissue; that the tumour would, in fact, form the centre for the malignant growth. These views, although in the main, I believe, correct, are not quite in accordance with the teaching of the text-books. There is another point of interest in connexion with these tumours upon which the books are, I venture to think, somewhat misleading. Upon consulting some of the text-books in common use you will, I think, find that the adeno-fibromata, the adeno-sarcomata and the adeno-cystomata are described as entirely distinct and different growths, without any reference to the possibility of the sarcomatous forms being simply produced by changes occurring in the adenomata or adeno-fibromata. That the change from the benign to the malignant form of growth is not uncommon I have, however, no doubt. Amongst the cases of tumours of the breast upon which I have operated during the past two years there were five in which the growths were small and had all the characteristics before operation of adeno-fibromata. In each of these cases there had existed without change for a long period a chronic mammary tumour, which shortly before the operation had commenced to grow. In three of the cases the tumours proved to be sarcomatous, one was scirrhus and one was "duct" cancer, while in each there was clear evidence that the original growth had been an adeno-

fibroma, which formed the soil in which the malignant disease had started.

The last of the cases occurred only a week since and is so characteristic that it is perhaps worth relating. The patient was a lady forty-three years old, who seven years ago discovered quite by accident a small "lump" in the right breast. Having thus discovered it, she, as is the custom with many patients, carefully at first concealed the fact of its existence. No increase of size or discomfort occurred, but ultimately she consulted a physician, who told her that the swelling was not in itself serious, but that, on the whole, it would be better at some convenient time to have it removed, and, further, that if it showed the least inclination to increase removal should at once be undertaken. She did nothing more in the matter till three years later, when she was confined of a child. The swelling then became sensitive and she consulted the accoucheur in attendance, who advised her to leave the tumour entirely alone, unless it grew larger. This advice she readily took. Three years afterwards the increase in size commenced, and, still reluctant to have anything done, she allowed the growth to continue until a fortnight before I operated, when she consulted the physician to whom she originally went and was told to submit to operation without delay. Upon removing the tumour, which lay in a well-marked capsule and was attached to the breast at one point only, I found it was clearly an adeno-fibroma, but in its centre was a rounded mass of softish material, to which the increase in size had been manifestly due. This semi-gelatinous material proved to be a "spindle-celled" sarcoma and was on all sides surrounded by a layer of tissue identical in structure with that of a benign adeno-fibroma. At one point the sarcoma was creeping towards the surface, and over this part the benign structure was so thin as to be hardly perceptible. The breast around showed no actual sign of disease, but as it was somewhat hard, and as a small hard gland could be felt in the axilla, I thought it better to take away the whole mamma. In this case I think there cannot be any doubt that the tumour had only recently become sarcomatous. The chronic mammary tumour, in fact, represented a weak point in the breast, and irritation of some kind, produced probably during the time of suckling, affected the nutrition of the tumour in such a way that it began to grow erratically, a sarcomatous change in it being the result. If the patient had not been the subject of a chronic mammary tumour it is in my opinion nearly certain that she would not have developed any malignant growth, for this disease as clearly as possible originated in the tumour. I also believe that had the tumour been removed when it was first discovered—that is to say, before the existence of any tendency to change in it—the patient would not have suffered from sarcoma at all. There is a tradition which is still fostered by the teaching of some of the text-books that these chronic mammary tumours (adenoma and adeno-fibroma) tend to shrink and sometimes entirely disappear during lactation. I do not know upon what evidence this teaching is based; I have seen a great deal of this class of mammary tumour before, during and after lactation, and I can with all truth say that I have never seen a tumour which I had good reasons for believing to be an adenoma or adeno-fibroma show the least inclination to shrink, to say nothing of disappearing altogether. I have, however, seen such tumours increase rapidly during the suckling period, and I have seen, without doubt, a simple adenoma-fibroma become malignant under similar circumstances. Chronic mammary *indurations* sometimes shrink and disappear during lactation, especially after the first parturition, but I do not believe that the true chronic mammary tumour ever disappears in this way, nor can I regard it as pathologically likely that it would do so, as the tendency after irritation would surely be towards growth rather than shrinkage.[1]

I have mentioned in the description of one of the cases, to which I have just called your attention, that there was a hard, oval, enlarged gland in the axilla. This gland was not merely enlarged in consequence of irritation, but was affected by sarcoma of the same kind as the disease in the breast. Not long ago I saw another instance of the same kind. Incidentally the existence of these secondary sarcomatous glands is of some interest; for it will show you that you must not rely too implicitly upon the occurrence of secondary enlargement of the glands in tumours of the breast as a symptom of carcinoma as distinguished from sarcoma, although it is, I believe, pretty generally taught that secondary disease of the glands is pathognomonic of carcinoma.

If you have followed my remarks upon the subject of these chronic mammary tumours generally, you can easily anticipate my recommendations as to their treatment. I have no doubt whatever that the proper course to follow upon the discovery of one of these tumours is to urge its immediate removal. The operation is in itself trifling, the patient need hardly be confined to bed at all, and the resulting scar is so small that it is almost imperceptible. Thus by a trifling proceeding which is entirely without risk you can rid your patient of a structure which is abnormal and which by reason of its imperfect development is prone to become the seat of a malignant disease. To advise patients, as is so commonly done, to leave these tumours alone until they show signs of growth is in my opinion wrong from every point of view unless some special or unavoidable reason exists for such advice, for by so doing you will, I believe, condemn a certain number of women to be afflicted with malignant disease who would, if the removal of these tumours were undertaken immediately upon their discovery, escape the more serious affection altogether. Should the treatment of the tumour in any case be postponed until increase in size has commenced it is clear that an operation for its removal should be performed at once. The question then arises as to whether mere removal of the tumour only, the breast being left undisturbed, is sufficient, or whether the whole breast itself should be taken away. If there are no enlarged glands in the axilla this point can only be decided after the tumour has been laid open, when, if it appears that the increase of size has been due, as in one of the cases I have related to you, to the accession of new growth in or about the original tumour, the whole breast should undoubtedly be taken away. If, on the other hand, the increase seems to be due merely to a uniform growth of the primary tumour, the consistence and appearance of which remain the same throughout, then the operator may be content with the removal of the tumour only, at all events until the excised tissue has been submitted to microscopical examination. When enlarged glands exist in the axilla on the affected side—the opposite axilla being free—the whole breast should at once be extirpated.

In conclusion, let me warn you against the use, in these cases of *chronic mammary tumours* properly so called (I do not mean *chronic mammary indurations*), of the many liniments so much beloved by some practitioners, for I assure you they stimulate growth more than they promote absorption. If, for reasons which seem sufficient, it is decided in any given case to defer operation or to set it aside altogether, let me beg of you not to worry a structure, which is already inclined to grow, by irritating medicaments into unnatural activity, but to leave it entirely alone, in the true sense of the word, and—a thing which is most difficult—endeavour as far as possible to make the patient do the same.

[1] The differential diagnosis of chronic mammary tumour and chronic induration of the breast was described here in the lecture as originally given.

A Clinical Lecture

ON

CERTAIN PHYSICAL SIGNS MET WITH IN A CASE OF PNEUMONIA.[1]

Delivered at the Manchester Royal Infirmary,

BY GRAHAM STEELL, M.D.ED., F.R.C.P.LOND.,

PHYSICIAN TO THE HOSPITAL.

GENTLEMEN,—The case which I am going to relate to you was one of pneumonia of the left upper lobe, but it presented certain unusual features, as you will see. It will serve admirably, however, to illustrate some of the facts to which I ask your attention. A shirtmaker aged twenty was admitted to the Infirmary on Oct. 25th last. Her illness was stated to have begun on the 21st with general malaise, pain between the shoulders, and severe cough. It appeared that she had enjoyed good health till the onset of this illness.

[1] The case related was published in full in the "Clinic" of the *Manchester Medical Chronicle*. It is used here only as a text for remarks on percussion-changes in pneumonia and on the nature and causation of bronchial breath sound.

After her admission to the wards it was noted that she had circumscribed flushes on the cheeks; that her breathing was rapid (fifty per minute); that she was restless and distressed; that she coughed up a small amount of tenacious rusty-coloured sputum; that her temperature was 102°, her pulse 126 and that towards night she became slightly delirious. Coming now to physical signs, the left side of the chest at the upper part moved less freely in respiration than the right at the same level. On percussion there was intense dulness over the upper lobe of the left lung, whilst the lower lobe of the same lung yielded tympanitic resonance. This last was audible at the back and was evidently *not* communicated stomach resonance. Over the greater part of the dull area in front there was no breath-sound to be heard, but at the lower border of the dull area a few small bubbling sounds were audible with indeterminate breath sound. At the back, in the neighbourhood of the root of the lung, feeble and indistinct bronchial breathing was heard. Over the left lower lobe and the right lung there was vesicular breathing. Behind, over the upper part of the left lower lobe, a few small bubbling sounds were heard. No satisfactory conclusion could be arrived at as to the condition of the vocal fremitus owing to the weak and high-pitched voice of the patient. She continued very ill, but without material change in the physical signs, till Oct. 27th, when her temperature, which had been 102° in the morning, fell in the evening to 97°. The pulse-rate also fell, but respiration remained rapid (38-48) for ten days. A most conspicuous feature of the case was the unusually tenacious character of the sputa, which caused the patient much distress. On one occasion shortly after the crisis the patient seemed as if she would be choked in her attempt to dislodge some tenacious matter from the air passages. On Oct. 29th, for the first time, feeble bronchial breathing was audible over the front of the chest as well as behind at the upper part. The dulness gradually disappeared, giving place to normal resonance. During the transition stage tympanitic resonance and cracked-pot sound were elicited on percussion. Moist sounds were very scanty. Vesicular breath-sound was re-established and the resonance of the left lower lobe became normal, losing its tympanitic quality. The treatment consisted of ten grains of chloral hydrate and two drachms of infusion of digitalis every four hours. Abundant nourishment and some alcohol were given throughout the illness. After the crisis a mixture containing aromatic spirit of ammonia and infusion of senega was substituted for the chloral and digitalis mixture. The patient made a good recovery and was discharged to the Barnes Convalescent Hospital on Nov. 21st.

The unusual features of the case were (1) the silence of respiration over the consolidated lobe and (2) the tympanitic quality of the percussion sound over the lower lobe of the affected lung. Now, with regard to the tympanitic quality assumed by the percussion resonance of the left lower lobe, the first conjecture in explanation of this occurrence was that we had to do with the communicated resonance of a distended stomach. We know that sometimes the stomach note is elicited on percussion over the greater part of the left side of the chest. Under the circumstances the percussion dulness of the heart may be quite lost, and this, too, when the organ is actually enlarged and its beating can be seen under the very spot which yields tympanitic resonance.

The phenomenon in question was referred to by the late Dr. Walshe as "horizontal conduction." Careful examination in our patient did not, however, confirm this explanation of the abnormal resonance and left no doubt, in fact, that the tympanitic resonance was of pulmonary and not of gastric origin. We are quite familiar with a similar phenomenon in the upper lobe of the lung when the lower lobe is consolidated. When the lower lobe of the left lung is consolidated we expect indeed to find the resonance of the corresponding upper lobe assuming tympanitic quality, just as it does in the case of pleuritic effusion. It is a fact, of which I hope you are all aware, that when the normal vesicular structure of the lung contains less than the normal amount of air its resonance assumes a tympanitic quality. Here is Skoda's dictum: "That the lungs, partially deprived of air, should yield a tympanitic and, when the quantity of air in them is increased, a non-tympanitic sound appears opposed to the laws of physics; the fact, however, is certain." The healthy lung in the chest, as you know, yields a *non-tympanitic* resonance on percussion, but a healthy lung, if percussed on the post-mortem room table, will be found to yield a *tympanitic* resonance. I will not attempt to explain the phenomenon of the assumption of tympanitic quality by the resonance of the unaffected lobe in cases of lobar consolidation. When the lower lobe is consolidated, it is the rule, as I have said, for the upper lobe to manifest the percussion change indicated, but the case related is the first in which I have observed assumption of tympanitic quality by the resonance of the lower lobe in the presence of consolidation of the upper lobe. Bear in mind that in the cases referred to there is no evidence of the lobe which yields tympanitic resonance being itself the seat of partial consolidation.

I know an examiner in medicine who used to be very fond of asking the question, "What is the first percussion change observed over the affected portion of lung in a case of pneumonia?" The reply he wished to elicit, of course, was "assumption of tympanitic quality by the resonance," and I fancy the candidate who answered "dulness" did not fare very well in the subsequent proceedings. This reminds me of another examiner, with whom a favourite question was, "What is the percussion sound over a cavity in the lung?" The reply he wished to get was "dulness." As a matter of experience we do find dulness over most cavities, provided they are not very superficial. All the same it is not the cavity which occasions the dulness; it would occasion rather tympanitic resonance. The reason of our finding dulness over most cavities depends on the fact that consolidation of the lung almost invariably precedes its excavation and the dulness is not due to the cavity but to its thick consolidated walls. In pneumonia of the upper lobe of the lung during some part of the course of the disease, either during the stage of invasion or of recession—when there is a state of partial consolidation—a cracked-pot sound is generally noticeable in the infra-clavicular region. I hope none of you have got into the habit of necessarily associating the cracked-pot sound with the presence of a cavity in the lung. It is true that over a superficial cavity in the upper part of the lung freely communicating with the bronchus we can generally obtain cracked-pot sound by striking rather forcibly during expiration whilst the patient keeps his mouth open; but in the same manner we can elicit the sign quite as well in cases in which there is no cavity whatsoever, but only a state of partial consolidation of the parenchyma of the lung. It would be a grievous error in a case of apex pneumonia during the process of resolution to conclude from the presence of cracked-pot sound that the lung had become broken down and excavated, or in the earlier stage, from the same sign, to conclude that the patient must have been the subject of phthisis previously if the evidence of acute pneumonia is so strong as to render the recognition of the latter impossible to avoid. These are very practical points and you are not likely to be long in practice without meeting with cases of pneumonia of the apex presenting physical signs identical with those which are characteristic of phthisis—cases the nature of which, however, you are able at once to recognise by the history and other circumstances.

Before leaving the subject of pulmonary percussion I wish to call your attention to the varieties of tympanitic resonance with which we are familiar clinically and which depend chiefly upon the volume of air thrown into vibration, whether such air be contained in the vesicular structure of the lung or in a cavity. Recollect the different percussion sounds which you obtain by percussing respectively a moderately distended stomach, a moderately distended colon and a moderately distended small intestine. All yield tympanitic resonance, but the sound of each is different from that of the others. If you watch the extension upwards of a pleuritic effusion you will notice a like series of changes in tympanitic percussion sound above the effusion. When tympanitic quality is first acquired by the lung resonance above the effusion the tympanitic sound is, as we say, "full," although perhaps never so "full" as the resonance of the distended stomach. As the fluid extends upwards the "fulness" of the sound diminishes as the air containing space is more and more encroached upon by the increasing effusion. Finally, perhaps the effusion reaches the second cartilage and then in the first intercostal space we have a very "empty" tympanitic sound such as you can imitate by percussing the cheeks with the mouth open or by filliping the trachea. This very shallow variety of percussion sound is often called a "tubular" sound, whilst the intermediate variety between the "tubular" and "stomach" sound is called "amphoric." I do not think it is desirable to retain these names: the important point is to recognise the tympanitic quality of the sound, and its volume can be indicated by using the adjectives "full" or "empty," which of course are relative terms.

Practically one knows at once what is meant by the expressions "full" tympanitic resonance and "shallow" or "empty" tympanitic resonance. The great objection to using the terms "tubular," "amphoric," and "stomach" resonance is that the one variety passes insensibly into the other. There is no sharp definition of them.

We come now to the auscultatory phenomena of our case. We had to do with an acute pneumonia of the left upper lobe, and yet during the greater part of the course of the disease there was silence over the consolidated lobe. It is true there was always bronchial breathing in the neighbourhood of the root of the lung, but that, of course, was of little or no importance. Over the consolidated lobe we heard no breath sound. It is a well recognised fact that such pneumonias are met with—pneumonias over which instead of hearing bronchial breathing we do not hear any sound at all, neither breath-sound nor adventitious sound. They occur more frequently in the lower lobe than in the upper, as might be theoretically expected, and when the lower lobe is affected they are perhaps more important from a diagnostic point of view, inasmuch as they are then (especially as the vocal fremitus is diminished or annulled) very liable to be mistaken for pleuritic effusions—serum or pus. Even the occurrence of rusty sputum does not save from error, for you know how commonly pleuritic effusion accompanies or, more correctly, follows pneumonia. In our present case, the upper lobe being the part affected, any difficulty of diagnosis in this direction never arose. Moreover, the patient's temperature dropped perceptibly on the sixth day of illness and did not rise again. This is fairly good evidence that there was not empyema at least. In a case of empyema associated with pneumonia the crisis of the pneumonia may be pronounced enough, but the temperature with or without an interval of apyrexia begins to rise again and is apt to assume an intermittent type, being normal in the morning and elevated in the evening.

What explanation can be given of the absence of breath-sound in rare cases of pneumonia? Cases with persistence of "silence" are certainly rare, but if you frequently auscultate ordinary cases of pneumonia, as one can do when one is resident in hospitals, you will find that occasionally the bronchial breath-sound usually audible is absent. Moreover, and this is very important for after-considerations, you will often be able to restore the bronchial breath-sound by causing the patient to cough repeatedly. In a case of pneumonia in the stage of hepatisation you know the rule is that bronchial breath sound is audible over the affected part. You can always recognise it by its three great characters: (1) The expiratory sound is as long as the inspiratory; (2) there is a distinct pause between the inspiratory and expiratory sounds; and (3), most important of all, the sounds have a special quality, which can be represented by inspiring and expiring more or less forcibly through the mouth arranged to utter the consonants *ch* guttural in combination with a vowel, which vowel varies with the pitch of the breath-sound that we desire to imitate. Bronchial breath-sound, then, has a special quality and a peculiar rhythm. The special quality of bronchial breathing, which I hold to be best represented by the term "*ch* guttural," is described in many text-books as "harshness," but it is something more than this. Lastly, the inspiratory and expiratory portions of the sound are of very uniform intensity from beginning to end.

Let us now contrast these characters of bronchial breath-sound with the characters of "vesicular breath sound," that is the normal breath-sound of the healthy lung. Vesicular breath-sound is soft and breezy in quality; the inspiratory portion is the essential part and is three or four times as long as the expiratory, if the latter exists; the inspiratory part is not of uniform intensity, but rises in intensity to its maximum, which it does not quite maintain to the end; there is no pause between the inspiratory and expiratory portions, supposing the latter to exist, which is not always the case; the expiratory sound, if present, is loudest at its commencement and is of short duration—one-third or a quarter that of the inspiratory sound. Absence of the expiratory sound cannot be considered a sign of disease, whilst prolongation of expiration characterises nearly all morbid breath-sounds. Vesicular breath-sound is the breath-sound of the vesicular structure of the lung, hence the name "vesicular." What, then, is bronchial breath sound? Where is it produced? Over a consolidated lobe of lung, in the great majority of cases, we hear bronchial breathing, but it cannot be produced, surely, in the consolidated portion of lung, for there is here no to-and-fro movement of air. It must be conducted rom elsewhere and the question is, Whence is it conducted?

Let me briefly refer to the history of the term "bronchial breathing," which term we owe to Laennec, the inventor of the art of auscultation, who brought it to such perfection that little remained to be done, and that little was done by Skoda. Laennec's definition of bronchial breath sound is as follows: "Bronchial breath sound: I shall describe under this name, or for shortness under that of bronchial breathing, the sound produced by inspiration and expiration in the larynx, trachea and large bronchial trunks situated at the root of the lung." Bronchial breath-sound, then, exists in health. When we hear it over a pneumonic lung it is the conduction of the breath-sound which is morbid, not the breath-sound itself. The only proposed modification of Laennec's definition of bronchial breath-sound refers to the seat of production of the sound. He speaks of it as produced in "the larynx, trachea and large bronchial trunks." There is no doubt that it is well heard in all these situations, but its essential production probably takes place at the glottis of the larynx. We answer, then, to the question, "What is bronchial breath-sound?" that "it is the breath-sound which we hear in health over the larynx and trachea and frequently over the large bronchial trunks"; and the question, "Where is it produced?" by "At the glottis." How happens it, then, that this breath-sound should be heard over consolidated lung? In a consolidated lung the proper lung breath-sound, the vesicular, is, of course, annulled, but the bronchi—the branches of the great bronchial tree having its root at the larynx—are still patent in the consolidated mass representing the lung parenchyma, and it is through them, we hold, that the bronchial breath-sound travels to the surface of the chest over the consolidated lung. If we want proof that the glottic sound can be so conducted, I think we have it in the fact that we may occasionally—though, I admit, rarely—hear the articulation of the whispered voice over the surface of the chest under the circumstances. Now the whispered voice is the articulated expiratory murmur, and the articulation, we know, takes place in the mouth: therefore if we have proof of conduction from a considerable distance beyond the glottis there need be no difficulty in accepting conduction of the sound produced at the glottis. How do these considerations help us to explain our case of "silent" pneumonia? Why was there no bronchial breath-sound over the consolidated lobe? Simply because the bronchi were blocked with unusually viscid secretion. Of there being unusually viscid secretion we had plenty of evidence. In ordinary cases of pneumonia one finds that temporary silence is not uncommon, because temporary blocking of the tubes is not uncommon, but repeated coughing usually suffices to dislodge the obstruction. I cannot too strongly urge upon you the importance of clearly defining bronchial breath-sound. If bronchial breath-sound is, indeed, not a lung-sound at all, but a glottic sound, merely conducted through the lungs to the surface of the chest under certain circumstances, its confusion with lung-sounds or with sounds which are in part lung-sounds is a serious error. I well remember as a student the vexation caused me by being taught that very dissimilar breath-sounds were all alike bronchial. I had no difficulty in recognising what I now know to be really bronchial breath-sound, but it was a year and more after my graduation before I grasped the true definition of the sound and was able to separate it absolutely from a large number of varieties of breath-sounds which I had formerly been taught to call bronchial breath-sounds. The physician whose house physician I was at the time advised me to read Skoda's book and was good enough to mark for me the important passages. These I read and have since many times re-read. Skoda's teaching gave me at once the definition of bronchial breath-sound for which I had formerly sought in vain, and I have little doubt that had I not fortunately come under the influence of his teaching I should have still been groping in darkness concerning one of the essential departments of pulmonary auscultation. The confusion into which so many British teachers of auscultation have fallen with regard to bronchial breath-sound may, I think, be readily explained, and I will endeavour to explain it to you. I will quote first of all from the great English classic the late Dr. Walshe's treatise on "Diseases of the Lungs." The truthfulness and precision of Dr. Walshe's descriptions of matters of observation leave nothing to be desired. Here is his definition of the bronchial breath-sound of health. He says: "Bronchial respiration, audible between the scapulæ at the upper end of the sternum and the sterno-clavicular angles, in the sites corresponding to the bifurcation of the trachea, wants in both its divisions the perfect softness

and gentle breeziness belonging to the pulmonary species; both are slightly harsher, of higher pitch, more rapidly evolved, especially the expiratory, and follow each other less closely, are less accurately continuous, than in pulmonary respiration." And here is the passage to which I wish specially to call your attention: "In some persons," says Dr. Walshe, "the respiration is very purely pulmonary (i.e., vesicular), even between the scapulæ." It is evident from this last sentence that Dr. Walshe admits what we shall immediately contend for—namely, that the normal bronchial breath-sound of Dr. Walshe and the British school is a mixed, and therefore impure, breath-sound. Let us next take Dr. Walshe's description of the bronchial breath-sound of disease. After describing "harsh respiration" he goes on to say: "This type insensibly passes into the higher grade bronchial respiration. Both sounds are now rough and hard and notably more dry than in the natural state; the sharp blowing quality is heard in inspiration as distinctly as in expiration, and in the latter to a greater degree than in the respiration of the previous type. The intensity of both sounds appears increased, the duration of expiration is considerably augmented and is even greater than in normal bronchial respiration; otherwise, morbid breath-sounds of this type closely resemble the natural sounds in the larger bronchial tubes." Note especially here that Dr. Walshe refers to the breath sound as heard normally "between the scapulæ, at the upper end of the sternum and the sterno-clavicular angles in the sites corresponding to the bifurcation of the trachea"—in short, we may conclude, at the roots of the lungs. But he himself tells us that "in some persons the respiration is very purely pulmonary, even between the scapulæ." Can one wonder that confusion has arisen when a confessedly mixed breath-sound has been taken as a *type*—a mixed breath sound which is composed of two constituents bearing no definite proportion the one to the other? Laennec admits all that I contend for—namely, that the breath-sound which has been taken as the type of bronchial breath-sound by the British School is a mixed breath-sound, for he says: "In some subjects the breath-sound over the sternum and at the root of the lung—that is to say, in the inter-scapular region, and especially in the neighbourhood of the internal superior angle of the scapula—presents some of this (the bronchial) character, especially in thin subjects, but (and here is what I want you to note) it is less easy to recognise because one hears at the same time pulmonary—that is, vesicular—respiration." In some subjects at the roots of the lungs the breath sound is distinctly bronchial, even according to Skoda's definition; in others, as Laennec and Walshe state, pulmonary—i.e., vesicular—breath sound is well heard and obscures whatever bronchial breath-sound there may be. Such differences in individuals probably depend on the manner in which the bronchi dip into the lungs. I hold, then, that the confusion which has arisen as to the definition of bronchial breath-sound in this country depends on the breath-sound of the roots of the lungs "between the scapulæ" being taken as the type, whilst such breath-sound is a mixed one in the great majority of individuals, composed in varying proportion of a bronchial and a vesicular element. Skoda, on the other hand, goes to the seat of production of the sound for his type of bronchial breath-sounds. He says: "A respiratory murmur cannot be called bronchial unless it has the character of a laryngeal or tracheal murmur differing from the latter only in respect of the pitch." You know what the characters of the laryngeal breath-sound are as regards rhythm and quality. (1) The expiratory portion is as long as the inspiratory portion, and there is a distinct pause between them. (2) Both portions possess that peculiar quality which is represented in the sound produced by inspiring and expiring forcibly through the mouth arranged to utter the *ch* guttural sound in combination with a vowel, which vowel varies with the pitch of the breath-sound. It has been objected that the *ch* guttural sound does not occur in the English language, but is it a question of language at all? In disease there are not a few breath-sounds which we are unable to classify either as vesicular or bronchial—for such Skoda used the term "indeterminate." They are met with generally in states of partial consolidation of the lung—in transition states. If we hear bronchial breath-sound over a lung at a distance from the root we know that the vesicles of the part have ceased to contain air and are no longer in play, and that the branches of the bronchial tree running through the affected part are surrounded by airless tissue of a certain depth. Hepatisation of the lung and pleuritic effusion alike fulfil these conditions. If we hear, on the contrary, vesicular breath-sound, we know that the vesicles are air-containing and in play. But we may be unable to say that the breath-sound is distinctly either bronchial or vesicular. For breath-sounds of this kind Skoda's indeterminate class is most useful. Let me, in concluding this subject, give you Skoda's own advice in the matter. He says: "The more delicate and practised the ear of the observer, the more readily will he judge rightly of these transition murmurs. It is, however, much the safer plan to regard all respiratory murmurs which are not distinct in character as indeterminate murmurs and to draw no conclusion from them without due consideration of all the other indications obtainable by percussion &c. With such precautions an observer, though but moderately practised in auscultation, will rarely fail in his object."

ON THE

TREATMENT OF OZÆNA AND RECURRENT NASAL POLYPI BY OPENING AND DRAINING HIGHMORE'S ANTRUM.

BY WM. ROBERTSON, M.D. GLAS.,
SURGEON TO THE THROAT AND EAR HOSPITAL, NEWCASTLE-ON-TYNE.

BEFORE proceeding to cite a few cases taken at random in support of the treatment referred to in the title of this article, a few general remarks may not be out of place. Here and there in the literature of the subject it is being granted that quite a variety of intra-nasal conditions are traceable to diseased states of the antrum, more especially now that diseases of these cavities are becoming more accurately diagnosed and their greater frequency realised. Nasal blennorrhœas especially must no longer be considered of purely intra-nasal origin, but for the most part as symptomatic, and that chiefly of empyema of the antrum. Generally speaking, empyema of the antrum in its ordinary development is readily made out; but what I should like to draw attention to is that there are less pronounced pathological changes in the antrum existent, equally demanding treatment, short of which intra-nasal conditions presumably depending on these remain inveterately unbenefited by measures purely local. Further research in antral disease and more extended clinical experience will no doubt clear up these points as well as afford some rational explanation of this inter-dependence of nasal on antral diseases. Since first suggesting this method of treatment some time ago increasing experience has only confirmed the value of the procedure. As regards ozæna it has become increasingly apparent that in almost every case, if search be made sufficiently long and diligently, some other condition besides the mere ozænatous state in the nose will be found. In all cases I believe it possible to demonstrate that ultimately the natural opening of the antrum becomes involved, and, this leading to stenosis and retention in this cavity of exhalations and secretions, a condition that at once seriously complicates the original state arises and prevents, unless systematically treated, any prospect of recovery. It has seemed to me that in the presence of nasal ozæna one may expect to find one or more of three conditions to exist in the mucosa of the antrum—viz., (1) associated with a short duration of the ozæna is to be found an injected inflammatory hypertrophy of the lining membrane of the antrum, leading to stenosis of the hiatus and retention of exhalation and secretions; (2) these latter, the secretions, are found inspissated in the form of white curdy masses, giving the appearance as if the inside of the antrum had been white-washed—these masses have a most foul odour, distinctly of the ozæna character; (3) the pus remains fluid and of a bad odour. In both the latter cases the mucosa of the antrum is immensely thickened, pulpy and full of blood, and the ostium can be observed from the internal aspect to be closed by the surrounding swollen central membrane. The diseased condition of this latter has, I suppose, led to malnutrition of the antral walls, of the inferior turbinals and to disorganisation of the teeth. Stalactite-shaped spurs of bone arising from the walls of the antrum are frequently detected in the cavity along with these conditions, arising no doubt under the stimulus of increased blood supply in the mucosa. It needs not to be mentioned that ozæna is often complicated by other nasal conditions which if over-

looked will lead to unsatisfactory results. In the case of ozæna disease of the middle turbinated bone without polypi will, I believe, often be found. In not a few cases I have found this bone in ozæna enlarged and deflecting the septum and no doubt pressing on and sealing up the hiatus. Pus may be observed exuding from between it and the septum. It (the middle turbinal) is easily perforated, thus differing from the healthy resistance of a normal turbinated bone; the interior is found cystic and in the loculi pale granulation tissue material is found. The bony trabeculæ of the body readily break down and the bone is easily removed piecemeal with the nasal gouge forceps. In the following cases, details of which will be given, it will be found that the three conditions referred to were present. In them every known recognised method of treating ozæna was employed for months; for example, chlorate of potash douches were used and found very effective, as much so as perhaps any other routine measure. The galvano-cautery proved temporarily useful. Of cauthos cotton (suggested by Hunter Mackenzie of Edinburgh) I can say little. I have employed it in one or two cases, but without result. Trichloracetic acid was also used, but according to patients' statements increased the crust formation. The opening and draining of the antrum at once abolishes crust formation, hence placing this mode of treatment far above usual routine procedures.

It matters little, I find, what kind of lotion is employed to douche the antral cavity, so long as abundance of it is used after the cavity itself, well opened, has been thoroughly cleared of all its diseased contents. It is a matter of importance to make a large opening, as if this is originally made small it subsequently so contracts that introducing the lead spigot gives pain. I need not here refer to the steps of the operation in detail; shortly, an aperture about the size of a sixpence is made in the anterior wall of the antrum; then with the aid of an electric search-light the cavity is carefully examined and due surgical treatment carried out. The curette is freely used to remove diseased mucosa &c. A soft rubber drainage-tube is laid along the floor of the antrum and cut off flush with the gum. This is kept in for fourteen days, when an S-curved lead spigot is suited to the aperture, or the use of the drainage-tube is continued. I prefer this approach to the antrum, inasmuch as it is the only way that affords full facilities for due treatment, exploration, curetting, drainage &c. The lead spigot can be worn subsequently for months without the slightest inconvenience—a matter of much importance in the somewhat long after treatment often necessary in these cases. A rather large opening in the bone leaves a sinus free from pain and not prone to become irritable, as is the case with the sinus resulting from a small perforation in the bone. When it is impossible to gain the consent of the patient to the more radical measure above recommended, but where a lesser operation under cocaine is consented to, the anterior wall of the antrum low down in the canine fossæ can be expeditiously entered with trocar and cannula, the trocar being furnished with a gimlet point and the cannula being so constructed (with a soft rubber flange at the proximal end) as to allow of its being left in for drainage. After the use of this instrument a little transitory swelling is observed in the cheek. The floor of the cavity is attained in this way. Such a perforation by the nose through the antral nasal wall is objectionable. The floor of the antrum is not reached, the route is not direct, dense bone may be met with, and over and above all it sets up serious mischief in the nose and permits the discharge to further irritate intra-nasal parts. I do not advocate this partial and imperfect operation, and should only entertain it when compelled by the circumstances I have hinted at.

Perhaps I may be allowed to refer to a matter somewhat out of place here, but yet so interesting that it may be allowed a passing remark. I refer to the considerable frequency of the association of otitis media with antral disease associated with ozæna. With this bare statement I remain satisfied at present, only desiring to state further that the aural condition is promptly reduced by perforation and washing of out the antrum. I have stated that at first the natural opening of the antrum is found closed in almost every case of ozæna. This I have proved by observation to be a stenosis due to inflammatory products in the antral mucosa. This stenosis I have found becomes resolved in about fourteen days after operation by regular douching of the antrum, and upon the occurrence of free patency here the progress towards cure of the ozæna becomes more rapid. Taking these circumstances into consideration, an analogy might be drawn between disease of the mastoid antrum as influencing the middle ear, or again that of the ventricle of the larynx influencing the laryngeal mucosa, and that of Highmore's antrum propagating and perpetuating disease in the nasal mucosa. The fact of the contents of the antrum (Highmore) resembling in many respects those of the nose points to the disease being propagated by direct continuity of structure—a fact contradicted by some writers, and rashly so, as proved not only here for ozæna, but also, as will be seen in the next section, for polypoid degeneration of nasal mucosa.

Before leaving this part of the subject, I have just to hand, from an independent source, evidence of the success of the plan of treatment advocated above for ozæna. Dr. Craik of Pelton Fell, who kindly sent me a case of ozæna with double antrum complication and acute left otitis, saw me operate on the left side with resulting cure to the ozæna on that side, and also at the same time a very rapid cure of the otitis. This gentleman writes me that he has lately treated two cases of ozæna, with the result of rapid cure in one case and approaching cure in the other by opening and draining Highmore's antrum. I am at a loss to explain the nature of the untoward influence antral disease has over intra-nasal conditions. It is a well-recognised fact that in ordinary empyema striking coincident intra-nasal conditions exist, principally of an inflammatory character, in the nasal mucosa, which immediately clear up when the empyema is duly treated. One can readily suppose that the vascular supply of the inferior turbinal must become altered in antral implication. That the osseous walls of the antrum undergo atrophy is recognised, and that the teeth drop out through pathological processes propagated from disease in the antrum is highly probable. I need not here enter into the contested question of dental caries as an etiological factor in antral disease, but cannot recognise it as such in double empyema, which points emphatically in the direction of a nasal origin. The recognised frequency of double empyema further restricts a dental origin. In one table I found six double cases to one single affection. In coming to deal with those cases of what may be called inveterate recurrent polypi my mind was exercised in the direction of the plan of treatment suggested by a case of polypi in both nares — namely, that of Case 2, subsequently detailed. I removed the polypi and endeavoured for some time to subdue collateral inflammatory conditions existing throughout the nares in the mucosa generally, but did not succeed. I opened both antra by small apertures in the anterior wall of the same. From that date every vestige of trouble disappeared both locally and generally. After wearing the spigots of lead for a year the patient reluctantly at my advice gave up their use. In less than fourteen days the left naris, more especially the middle turbinal, began to swell and give uneasiness. I reopened the antra, resumed douching and in a few days all was right again. This was evidence I could not overlook, and since then I have opened the antrum, where such polypoid recurrence took place when I have been driven to extremity—surely a less extreme measure than ablating the middle turbinal, which has been suggested. It appears to me that in these cases a time comes when the antrum is involved and a vicious circle established, and that the round of the pathological process requires to be followed before cure can be effected. Once the antrum is involved, though even slightly, it reacts on the nasal mucosa itself, and to benefit the nares effectually must be attacked. Pus is not always found in these cases, not even when gross lesions are met with, as, for example, in Case 4. In this case the antra were divided into loculi which contained inspissated masses of cheesy material, and also polypi and polypoid degeneration of mucosa, and there was, in addition, middle turbinated bone disease—an intricate case enough, and a fair example of the complications to be looked for in such conditions. The number of cases met with and operated on up till now, although not large, prove however, I imagine, conclusively enough the efficacy of the treatment adopted and will speak for themselves. The above remarks can be summarised in a few words: (1) Post-mortem as well as recent clinical experience conclusively show that disease of the antrum is much more prevalent than is generally supposed; (2) that in the case of ozæna stenosis of the ostium maxillare becomes at an early stage of the disease established through extension of the ozænatous process into the antrum, and leads to results requiring surgical interference—viz., opening and draining the antrum; (3) that in the case of inveterate recurring nasal polypi the antrum may with certainty be inferred to be implicated, and that opening and draining of this cavity offer the only prospect of a radical cure;

and (4) that in a certain proportion of cases of empyema of Highmore's antrum the middle turbinal becomes the seat of a peculiar form of inflammation, its bony trabeculæ being filled up and distended by pale granulation tissue material.

CASE 1.—A woman aged thirty-eight was sent to me by Dr. Thomas Oliver as a case of ozæna two years ago, and presented all the characteristics of the disease, which had been in existence for twenty-two years. Each nostril was large and roomy, and the middle and inferior turbinated bones were extremely atrophied, almost to the vanishing point. There were no points of ulceration and the septum was intact. Large crusts were present of the usual colour and odour. These were often got rid of, being sometimes the size of a finger. Five or six pocket handkerchiefs were used daily. When she was at school she remembered to have been troubled by the smell as well as by the discharge. Since then the disease has been the bane and worry of her life, and, when I saw her first, I considered her case the worst I had seen of atrophic rhinitis. Her eyes, besides, troubled her and she is also a sufferer from anæmia and acne. Until lately I treated her after approved methods—viz., chlorate of potash, douches, Gottstein's plugs, galvano-cautery &c.—with the usual result, there being modification of the symptoms, but not a cure of the disease. Some time ago I used the transillumination test and was somewhat startled to find a characteristic umbra on the right side and one less decisive on the left. Now, on neither side at any time was there the characteristic drop of pus in the nostril to guide one as to the condition present. After many trials I managed to dislodge some foul discharge *per viam naturalem* from the right antrum, but failed in the case of the left. The patient's consent was readily given for the performance of an operation, and with Dr. Oliver's coöperation I opened both the antra anteriorly, the left being opened first. This was done cautiously, so as to avoid hæmorrhage and to secure an undisturbed view of the interior. With the aid of the electric search-light the posterior region of the cavity was found to be lined with a thick layer of white curdy pus. A cushion (half an inch thick) of deeply injected mucosa lined its inner wall, whilst the soft parts of the floor were not so much altered, but were still abnormal. (I may say here that up to two years ago this patient's teeth were sound throughout; since then the upper molars and canines, have disappeared.) The cavity was unusually large and not entirely filled up, as is the condition in most of these cases. The natural ostium was impermeable to fluids syringed into the antrum. The right sinus was entirely filled with fluid contents and infiltrated mucosa. The foul ropy pus dislodged exactly resembled in odour that exhaled from the nose. In this antrum extensive jagged spurs of bone projected from the inner wall across the space. These had to be broken down in order fully to clear the cavity of diseased products, and were so situated that by any other approach but the one adopted they could not have been reached, certainly not by an alveolar puncture. On each side free hæmorrhage took place, but was readily controlled by gauze plugging for an hour or two. The next day the patient afforded the information spontaneously that it was the only day for twenty-two years on which she had not required one single handkerchief. By this time no perceptible odour from the nose was noticeable, nor was the daily and usual bad taste in the throat experienced. After twenty-four hours' purposive disuse of the lotion to the sinus and nose all that could be observed were a flaky, sparse return from the sinus and a white mottling of pus, slight in character, over the nasal mucosa. When this last is now examined, after slightly cleansing, it is found to have undergone a visible change. It is for the most part lubricated with a healthy secretion and is more voluminous in appearance, so that the nares do not look so roomy as before operation. The right ostium is slightly patent; the left not at all. The discharge through the tubes from the antra is slight and odourless. There is no pain or inconvenience from the presence of the tubes. Lastly, the umbræ on both sides are rapidly giving place to normal transillumination, the light spot under each eye just appearing. The umbra of the pupil is still present. Since writing the above both ostia have become freely patent. This seems to have further benefited the condition of the nasal fossæ, which now remain for hours unaffected with any accumulation of discharge at all, being only just lubricated with a healthy, inodourless secretion. I may say here that the anæmia is now disappearing and the acne of face and nose decidedly better, only a few discrete papules being present. Fifteen months have intervened since making these notes. Drainage of the antrum is still kept up. The interiors of the nares remain free from crust formation and are only naturally lubricated by a nearly healthy secretion.

CASE 2.—A man aged thirty-six, married, came to me a year ago with polypi in both nares and general hyperplasia of the nasal mucosa, offensive discharge &c. Both antral regions in umbra, as proved by electric light. Treatment: Removal of polypi and redundant nasal mucosa. On anterior puncture of each antrum under cocaine no pus was to be seen. In the left naris there was a considerable angular horizontal deflection of the septum. Drainage-tubes were used first, then lead spigots. In a day or so pus could be syringed out of each antrum. Six weeks of such treatment reduced the nasal mucosa to a strictly normal state, with all traces of polypoid structure gone. The deflection of the septum so far diminished as to afford perfect patency in the left naris. The patient now left the north for Dover, where he remained for over ten months, meanwhile continuing the use of douches to the antrum and the lead spigots. On paying me a visit I found the nasal secretions and the mucosa perfectly normal, and only a slight appearance of pus when washing out the antrum. I thought to discontinue the lead spigots and allow the antral openings to close. After a week or two's trial I noticed that the left naris began gradually to close, the left middle turbinated swelling up so as to meet the deflection of the septum. I thereupon reintroduced the lead spigot and recommended a further recourse to daily douching the cavity, with the result that the intumescence of the middle turbinated resolved itself and the whole mucosa returned to normal. The right naris remained normal as before. This case, amongst other things, shows how easily the above plan of treatment is borne. In this patient a tinnitus aurium which had existed on the left side entirely disappeared during the treatment of the antrum. Ear complication is a not infrequent occurrence in association with disease of the antrum. In Case 1 otorrhœa occurred three times. Now, since undergoing treatment, the membrane of the ear affected is soundly healed and hearing is nearly normal.

CASE 3.—In the beginning of February I met with another patient suffering from acute otitis media in a case of double empyæma with ozæna, the last two having been in existence for twenty years (I mean the formation of crusts and discharge from the nose). This lady, aged forty-eight, married, sent to me by Dr. Craik, was operated on under cocaine (being averse to chloroform and any but the slightest measures) by an anterior puncture, pus being found and the curette used.

CASE 4.—A man aged fifty-five, married, had had polypi frequently removed by forceps. When first seen both nares were crowded with polypi, and under illumination both antra were in deep umbra. Not much free pus was noticed in the nares, nor could the ostia maxillaria be found, although subsequently to operation found widely patent. Enormous ancient polypi extending into the post-nasum were snared. Under cocaine both antra were opened anteriorly, no pus being found. On the right side the sinus when opened was found occupied by what at first seemed a tumour filling the antrum, being slightly movable in the space. On endeavouring to detach this from its superior attachments it gave way and was found to be a thick septum covered by thickened mucosa in a state of polypoid degeneration. Beyond this other less perfect septa were found forming loculi filled with thick, putty-like, purulent masses. The curette removed a quantity of polypoid structure from the space. The left antrum, less perfectly examined (the cocaine not serving for prolonged operation, the case having been deemed a trivial one of empyema &c. only) was, found to contain polypoid structure and was curetted. Drainage-tubes first and then lead spigots were employed. Soon asthma, from which he suffered, disappeared, and the nasal mucosa rapidly assumed a normal aspect, all remains of polypoid structure rapidly disappearing. It is quite evident that any approach but that through the anterior wall would have been unsatisfactory. Attention might also here be drawn to the unsatisfactory condition the patient would have been left in had the antra not been opened. The usual diagnostic signs were absent, and nasal puncture would have been at fault in furnishing evidence of pus. The bearing of antral implication and treatment on inveterate recurring polypoid degeneration of the nasal mucosa is also well demonstrated. Subsequently a diseased portion of the middle turbinated was removed in this case. Now, eight months after the above was written, little remains of inflammatory condition in either naris. There are no polypi and the asthma is not noticeable. Douching of the antra is still maintained.

Osborne-road, Newcastle-on-Tyne.

AN ANALYSIS OF

TEN THOUSAND CASES OF DISEASE OR DISTURBANCE OF THE EYES, SEEN IN PRIVATE PRACTICE:

WITH NOTES AND COMMENTS.

BY R. BRUDENELL CARTER, F.R.C.S. ENG.,
OPHTHALMIC SURGEON TO ST. GEORGE'S HOSPITAL.

(Continued from vol. ii of 1892, p. 1378.)

Diseases of the sclera.—The sclera, from its nonvascular character, is very little prone to disease, and the cases in which its proper tissue was affected were only 20 in number, 4 of them occurring in males and 16 in females, and the form of disease was usually chronic inflammation. Scleritis appears to be generally associated with a rheumatic diathesis, and in one of the examples there had been six recurrences in the course of thirteen years. The anterior zone is the portion most liable to be affected, and it may become thinned, extended and altered in shape by the inflammation. Scleritis is apt to extend to the iris, but seldom in any great severity, perhaps producing one or more small tags of adhesion, and it has little direct influence upon sight. Hot fomentations locally and salicylate of soda and quinine internally have been the treatment on which I have chiefly relied for its relief. In some of the cases the condition was that which is commonly called "episcleritis," in which a more or less globular swelling is formed over the attachment of one of the recti muscles and in which there appears to be some strictly localised adventitious deposit on the sclera and beneath the conjunctiva. Episcleritis is a chronic and troublesome affection, but it is seldom attended by any serious consequences. After due attention has been paid to the secretions it will generally yield to a combination of quinine with small doses of perchloride of mercury, to be continued until recovery is complete, and aided by the enforcement of functional rest.

The *diseases of the iris* open a much more important chapter of ophthalmic surgery, and the cases were 262 in number—147 in males and 115 in females. They may be classified as follows:—

Acute iritis of distinctly syphilitic character occurred in males in the right eye alone in 9 cases, in the left eye alone in 8 cases and in both eyes in 7 cases—total, 24; it occurred in females in the right eye alone in 2 cases, and in both eyes in 4 cases—total, 6: or a total for both sexes of 30.

Acute iritis certainly or apparently non-syphilitic occurred in males in the right eye alone in 26 cases, in the left eye alone in 17 cases, and in both eyes in 28 cases—total, 71; it occurred in females in the right eye alone in 21 cases, in the left eye alone in 16 cases, and in both eyes in 21 cases—total, 58: or a total for both sexes of 129.

Posterior synechiæ as results of syphilitic iritis were seen in males only. They existed in the right eye only in 2 cases, in the left eye only in 3 cases, and in both eyes in 1 case—total, 6.

Posterior synechiæ as results of non-syphilitic iritis were present in males in the right eye only in 15 cases, in the left eye only in 8 cases, and in both eyes in 15 cases—total 38; they were present in females in the right eye only in 12 cases, in the left eye only in 10, and in both eyes in 18—total, 40: or a total for both sexes of 78.

Anterior synechiæ in males were present in the right eye only in 3 cases, in the left eye only in 1 case, and in both eyes in 1 case—total, 5; they were present in females in the right eye alone in 3 cases, and in the left eye alone in 1 case—total, 4: or a total for both sexes of 9.

Serous iritis in males existed in the left eye alone in 2 cases, and in both eyes in one case—total, 3; in females in the right eye only in 1 case, in the left eye only in 2 cases, and in both eyes in 4 cases—total, 7: or a total for both sexes of 10 cases.

The differential diagnosis between syphilitic and non-syphilitic iritis is easy only to the inexperienced, and, in relation to a large proportion of cases, becomes more and more difficult as experience increases. It is for this reason that I have stated the relative proportions of each variety in a somewhat guarded manner. Fortunately, however, the diagnosis, *quâ* iritis, is not of great importance; and need exercise little, if any, influence upon treatment. It is of the highest importance that the surgeon should discover whether his patient is the subject of constitutional syphilis, and that he should treat him for it when it exists; but this discovery may usually be made independently of the eyes. For iritis, whether it be syphilitic or not, unless it should yield within twenty-four hours to complete dilatation of the pupil, the only trustworthy remedy is mercury, which, in severe cases, should always be applied by inunction; and there can be no shadow of excuse for the practitioner who, under the impression that a given instance is not syphilitic, neglects the employment of the only means by which recovery, in the vast majority of cases, can be fully insured.

In November, 1886, I saw for the first time a gentleman about thirty years of age, of pale complexion and delicate aspect, who was the subject of severe iritis in the right eye. His history was that he had been attacked in a similar manner in the left eye about two years previously and that he consulted an ophthalmic surgeon who declared that it was necessary to perform iridectomy. The operation was performed skilfully—as far as I could judge from the appearance of the eye—and the inflammation subsided; but all perception of light was lost, never to return. With the right eye, on his first visit to me, he could count fingers at about a foot and I thought the internal administration of blue pill would meet the case. Recovery was complete, and in January, 1889, he suffered from a smart recurrence, for which blue pill was once more effectual. In April, 1892, he came to me once more, this time with a far more severe form of inflammation than on either of the previous occasions, and after a day or two had unfortunately been lost. He had bare perception of light, and the surface of the iris was much concealed by an abundant effusion of primrose-coloured lymph. There was also some cloudiness of the cornea and its margin was crossed by vessels. Inunction was at once commenced and rapidly pushed, with the effect that in five weeks the eye was perfectly well, free from adhesions and of normal vision. In this instance the patient did not present any indication of syphilis, either inherited or acquired, and he denied the latter in the most positive manner. He has regular and well-developed features, good teeth, no loss of hair, no cutaneous evidences, no enlarged glands, either cervical or inguinal, has a healthy wife and healthy children and by far too much sense to attempt any concealments from his medical man. Notwithstanding all this negative evidence the general character of the eye affection is eminently syphilitic, insomuch that, after the last attack, I determined to give him the benefit of the doubt, if such there were, and advised him to take the perchloride of mercury continuously for a twelvemonth. So far at least he has continued well since last May, and it is certain that the mercury acts as a tonic to him and improves his strength and general condition; but the question as to the syphilitic character of his case seems to me, after all, to be insoluble, and I have included it amongst the number of those which were either certainly or apparently non-syphilitic.

The late Dr. Anstie, whose early loss to medical science those who knew him have never ceased to deplore, was strongly of opinion that the influence of mercury, whether therapeutic or poisonous, was exerted more strongly upon the parts supplied by the fifth nerve than elsewhere; and he was accustomed to explain its powerful influence in controlling iritis by this supposed elective affinity for the affected tissues. I think it may certainly be said, in support of this view, that, even against the most unquestionably syphilitic forms of iritis, iodide of potassium is untrustworthy; although it must not be forgotten that iritis is most commonly seen as a complication of comparatively early forms of syphilis, and that the late stages, for the products of which the iodide is chiefly to be relied upon, usually fall upon other organs. If the dependence of syphilis upon a specific microbe should be ultimately established, as seems not improbable, the fact of the tendency of mercury, as of many other drugs, to affect certain parts in preference to others will remain unaltered; and it is evident that, given a bacterium as the cause of a disease, a remedy which acts by destroying the bacterium may yet, by reason of its elective affinity for certain tissues, be more efficacious in some regions of the body than in others. However this may be, I think there can be no question that the usefulness of mercury in iritis is in no way limited to, or conditioned by, the syphilitic forms of the affection; and I have always laid down the general principle that, if adhesions are present when a case is first seen, more especially if there is reason to believe that they are of two or more days' standing, mercury should at once be administered. When adhesions are quite recent, so as not to have acquired firmness, they

may be expected to yield to the action of a mydriatic if applied in an adequate manner, and there will be no grave risk in waiting for twenty-four hours in order to see whether its action will be effectual. If it be, and as soon as complete dilatation of the pupil has been attained, iritis will die out harmlessly and will terminate in complete recovery.

Amongst cases presenting curious peculiarities or calling for special forms of treatment, I may mention that of a gentleman who had contracted primary syphilis and whose hapless fate it was to commit himself to the tender mercies of a genuine homœopathist, who really administered "dilations." The syphilis ran its course unchecked, involving both irides amongst other tissues, and at length fairly died out, its chief stress having fallen upon the skin. The patient was by some means rescued from the homœopathist and was sent to Aix-la-Chapelle, where he underwent the "Schmier-kur" in great severity and was profusely salivated. In another German town both his eyes were iridectomised, and he ultimately came to me for an opinion as to whether he would be likely to gain, as far as his eyes were concerned, by any farther use of mercury. I thought not, and the result has confirmed my view. He has had no further symptom of syphilis, and his eyes, although greatly damaged, continue useful. The case was chiefly interesting as exhibiting what may be called the natural history of untreated syphilis, or, in other words, events which in modern times there have been but few opportunities of witnessing.

In all cases of recurrent plastic iritis, and in all cases of iritis with high tension (secondary glaucoma) it has been my practice to perform iridectomy; and I have done so, generally speaking, with satisfactory results. In recurrent cases, in which adhesions had been left behind by former attacks, and were presumably the causes of recurrence, I have often found that the operation, by breaking the continuity of the circle of the iris, put a stop to the trouble. Even when this result is not attained, the recurrences after the operation usually become further and further apart in point of time and ultimately cease. In addition to this ordinary consequence, the operation is of great utility by rendering closure of the pupil impossible, the iris tissue being removed at a region where it is not in contact with the lens, and the gap so made being of necessity permanent. The only cases in which iridectomy failed to exert any useful influence, the iritis recurring in spite of it and ultimately destroying vision, were two in number; and in each of them the patient was a sufferer from leprosy contracted in India. The eye disease appeared to be only a local manifestation of the leprosy, and no kind of treatment was permanently beneficial.

In a few cases of iritis with high tension I have performed sclerotomy instead of iridectomy, but have discontinued the practice on account of the resulting astigmatism. A lady about thirty years of age was brought to me with iritis of the right eye, of plainly specific character. The pupil was fully dilated and circular, but a ring of pigment spots upon the anterior capsule showed where adhesions had been recently torn through by atropine. The globe was very hard, the cornea steamy, and vision was limited to counting fingers at the distance of three feet. On the following day I made an effectual sclerotomy, with immediate relief to the tension, although mere paracentesis of the anterior chamber had been performed twice previously, by another surgeon, without appreciable benefit. The eye completely recovered, but the astigmatism produced by the operation seriously interfered with vision. Two months afterwards, with a minus cylinder of 4·0 horizontal and a plus cylinder of 2·0 vertical, I could only obtain $\frac{5}{10}$ of normal vision. If an iridectomy had been performed instead of the sclerotomy the relief of the tension would have been at least equally prompt and certain, and the wound would have united with little, if any, disturbance of the corneal curvature. The cases of serous iritis, of which only ten were met with, do not include those of sympathetic ophthalmia, although the two classes are so much alike in many of their characters that they might probably be placed together without inaccuracy. I am disposed to think that both are caused by the presence within the affected eye or eyes of bacteria, which, in the sympathetic cases, may be introduced into the injured eye by the instrument with which the injury was inflicted, and which, in the non-sympathetic cases, obtain access by some means at present unknown to the surgeon. The chief character of serous iritis, as of sympathetic ophthalmia, is that the inflammation commences insidiously, with a few points of adhesion of the pupillary margin and a slight turbidity of the vitreous, and with corresponding diminution in the acuteness of vision. After a short time the characteristic dots appear upon the posterior surface of the cornea, usually arranged in the form of a pyramid, with its base near the inferior margin and its apex in the pupillary region. At the same time the vision becomes diminished in a greater degree than the superficial changes will explain; but the ophthalmoscope shows considerable deep turbidity of the vitreous, which usually becomes beset with opaque particles, which display by their free movement a fluid condition of the humour. Both eyes are usually affected, one somewhat later than the other, and in such a way as to afford some support to the hypothesis of transmission. Occasionally the iritis assumes a rather severe character, but more frequently it remains insidious. The affection is very chronic, and periods of improvement are often interrupted by relapses which are difficult to explain. Under any treatment the disease is likely to drag on a course of many months; but in the majority of instances it will terminate in recovery with more or less impairment of sight. The majority of the subjects of serous iritis will be found to have suffered from syphilis, but I have seen a few instances in which no such history could be obtained by the most careful inquiry. In a young lady who was for a time under my care the affection was consecutive to a severe attack of mumps. She improved for a time, but she objected to continue the mercurial treatment which I thought advisable and so passed into other hands, with the result that one of her eyes was ultimately enucleated, whilst the other remains much impaired. Setting aside considerations relating to the general health, which must in every case receive individual attention, the means of controlling serous iritis may be briefly summarised. They are, in the order of their value, mercury, atropine, quinine and iridectomy. The mercury and the quinine I regard chiefly as bactericides, and the atropine and the iridectomy as means of controlling local changes which might otherwise be destructive.

In a malady so essentially chronic as serous iritis the rapid administration of mercury by inunction or by the mouth is seldom, if ever, desirable. I prefer to give the sixteenth of a grain of the perchloride of mercury in solution, three times a day; combining it, if necessary, with any adjuvant, such as opium or bael, in quantities barely sufficient to prevent any gastric or intestinal disturbance. At the same time I attach great importance to the local application of mercury to the eye, and this may be best and most conveniently accomplished by means of the discs of wafers manufactured by Messrs. Wyeth of Philadelphia, and now procurable in London. I have found the best for the purpose to be the wafers containing each the 2500th part of a grain of perchloride of mercury; and one of these may be placed in the conjunctival sac night and morning ten or twelve minutes after a cocaine wafer has been inserted in a similar manner. By adopting this precaution the perchloride of mercury does not act as a local irritant; but, even after the cocaine, I have seen stronger wafers, such as those containing the 500th part of a grain, give rise to some uneasiness. The mercury should be continued, both internally and locally, until all fear of recurrence is at an end, and it should be relinquished gradually and watchfully. In the dose mentioned it may be taken for many months without producing any effect upon the gums, and it often acts as a decided tonic. Quinine may be readily combined with the perchloride of mercury, and it not only acts as a bactericide, but it also serves to sustain the system during the progress of a long and depressing malady. It may occasionally be laid aside for other tonics, and it is unnecessary to say that the state of the secretions, the diet and the habits of life should all receive careful attention. The patient should take exercise whenever the weather will permit and should be protected against bright light by dark glasses or similar contrivances. The local treatment by atropine, or by atropine and cocaine combined, is required in order to diminish as much as possible the tendency to the formation and contraction of adhesions, and requires to be conducted with circumspection on account of the proneness of atropine in some eyes to excite irritation when it has been long employed. The weakest solution and the least frequent use by which dilatation of the pupil can be maintained are therefore to be recommended in all chronic cases, and if, in spite of these precautions, the atropine should be badly borne, it must be exchanged for duboisin or hyoscyamine. Iridectomy is indicated whenever the pupillary adhesions are so numerous and so dense as to threaten closure of the pupil, whenever recurrences are frequent and severe, and whenever the case becomes complicated by high tension. The superior segment should be removed and the surgeon

should aim at making a large coloboma, extending quite up to the periphery of the iris. I have seen only one accident produced by iridectomy, and that was in a hospital patient, in whom the adhesions were so firm as to tear the anterior capsule when the iris was drawn out of the eye, and so produce traumatic cataract. The lens was removed shortly afterwards, and the case ultimately did well, the eye recovering useful vision.

A case of very unusual character, which in some respects combined the characters of ordinary plastic and of serous iritis, was that of a girl twelve years of age, who was brought to me in October, 1891, with severe iritis of the right eye, which was said to have originated in scarlet fever in the preceding January, and which had been recurrent on more than one occasion. The pupil was contracted and there was no measurable vision. Atropine and perchloride of mercury were prescribed, and in a fortnight the patient returned with the active inflammation subdued and the pupil generally dilated, but with an adhesion on the nasal side and with much deep opacity. The vision was then $\frac{1}{10}$th of the normal and the treatment was left in the hands of the family medical attendant. In March, 1892, I found the adhesion detached and the vision increased to $\frac{1}{4}$th; but there were numerous flocculi in the vitreous and the surface of the optic disc was uniformly red, so as only to be distinguishable from the rest of the fundus as the meeting point of the retinal vessels. Cautious use was permitted; and in the following November the vision of the right eye remained stationary, but the vitreous was less cloudy. The vision of the left eye, which had previously been normal, had begun to fail, and was only $\frac{3}{4}$ths of the normal, whilst the left vitreous contained flocculi, and the left disc was as red as the right. Since that time the patient has remained under my observation and has taken perchloride of mercury constantly. She is in excellent bodily health, and has gradually brought her eyes more and more into use for educational purposes. She suffers no pain or discomfort, and is at present allowed to read for an hour twice a day. The vision of her right eye has for some months been stationary at $\frac{1}{2}$, and that of the left eye at about $\frac{2}{3}$rds; but the vitreous of both eyes is full of particles, and both discs are as red, or nearly as red, as ever. It is barely possible to perceive their outlines. For a long time I was apprehensive of the existence of a chronic neuritis which might ultimately bring about atrophy by the contraction of effused material; but the unchanging condition of affairs now leads me to hope that there is nothing more than a capillary hyperæmia, left behind by the original malady. It is not a little remarkable that the left eye has never suffered from iritis, although the deep changes of which it has been the seat have been precisely like those which followed iritis in the right eye. I have more than once seen instances of lost or greatly impaired vision from complete or partial nerve atrophy which was said to have originated in scarlet fever; but I have not met with any other case of iritis which appeared to be connected with scarlet fever, or of double nerve congestion of which iritis of one eye only had been the precursor.

Amongst cases of iritis distinguished from others only by their great severity mention should be made of those, unfortunately not as rare as they should be, in which the disease had been aggravated in its early stage by the application of some form of irritant, such as a solution of a salt of lead or of zinc. Such applications are usually the result of domestic medication, but I have known them to be prescribed by practitioners who failed to recognise the true nature of the affection, and who mistook impending iritis for a simple inflammation of the conjunctiva. An application from which I have seen much injury is vinum opii, the amount of opium in a drop being too insignificant to exert any sedative effect, whilst the alcoholic menstruum is an irritant of the most pronounced character. The general principle, when in doubt to use atropine, is one which cannot be too strongly impressed upon the mind of every person to whom an inflamed eye may be brought for treatment. It is possible, nevertheless, to commit the converse error. I have lately seen a gentleman advanced in life, in one of whose eyes a single adhesion had been left behind by an attack of iritis from which he had suffered thirty years before. The adhesion had been so stretched that it did not restrain pupillary movement, and was harmless. A few weeks since he had a trivial conjunctivitis of both eyes; and the adhesion was not only discovered, but was held to justify an active treatment by atropine, mercury, and functional rest, the grounds of which were not at first disclosed to the patient. When he was made acquainted with them, he not unnaturally found some solace in resorting to the advice of a different medical attendant. In non-syphilitic cases associated with a lithatic diathesis, and marked by a strong tendency to recurrence, a great deal may often be done to obviate this tendency by means of careful regulation of the diet and habits of life. The sparing use, or even the complete abandonment, of animal food, whilst the action of the skin and of the kidneys is encouraged by exercise, clothing and diluents, and that of the liver is stimulated by an occasional mild mercurial, forms the outline of a plan which must be varied to meet the requirements of individual cases, but which I have often pursued with great advantage. I have seen instances in which what seemed to be an established habit of recurrence was at last effectually broken through by perseverance on these lines, the patient being instructed to watch his urine daily, and to regard the appearance of deposited lithates as a storm-warning which he was by no means to neglect. When adhesions have been left behind by a former attack or attacks of iritis, and recurrence is either threatened or has occurred, the question of how these adhesions should be dealt with assumes considerable practical importance. It has always seemed to me that the effect of one or two adhesions of limited extent is far more injurious, regarded as causes of recurrence, than the effect of adhesions of a more extensive character, by which the muscles of the iris are more effectually restrained, and against which they cease to strive. The latter, indeed, point to risks of a different character, because they bring complete occlusion of the pupil into view as a near probability, but they are less frequently the exciting causes of the inflammation by which such occlusion may be produced. For adhesions of small extent the methods of detachment, contrived respectively by the late Mr. Streatfeild and by Dr. Passavant, would naturally suggest themselves as preferable to the disfigurement of an iridectomy; but the suggestion does not appear to me to be supported by practical experience. In either of these methods, whether the adhesion be detached by traction towards the pupil or towards the periphery, there is equally a danger that the capsule of the lens may tear more readily than the material of the adhesion and that a traumatic cataract may be produced; whilst there is also the danger of producing a concealed adhesion by the operation itself—an adhesion, that is, between the peripheral part of the iris and the cicatrix of the operation wound. Both these risks are set aside by iridectomy, which may always be so planned as to include only the non-adherent portions of the iris, and which, when done in this way, seems, by the destruction of the continuity of the muscular circle, to be completely efficacious in overcoming the irritation which the arrest of movement by adhesions is otherwise calculated to produce.

(To be continued.)

EXPERIMENTS WITH CHLOROFORM AND ETHER:[1]

CONDUCTED AT HYDERABAD, DECCAN.

BY C. H. LEAF, M.B. CANTAB.

THE following is an account of a series of experiments which were performed in the Laboratory of the Hyderabad Medical School, with the permission of Surgeon-Lieutenant-Colonel E. Lawrie, by Messrs. Leaf, Kelly and Chamarette, with the help of students Mahomed Abdul Gani, Ismael Khan and Abdul Hafiz. They were conducted with the view of watching the effects of chloroform on the respiration and circulation, and were for the most part extremely simple. The method employed consisted in first placing pariah dogs into a wooden box 3 ft. 10 in. long by 1 ft. 5 in. broad and 1 ft. 7 in. deep. The lid had an opening through which pieces of blotting-paper saturated with chloroform were passed. The movements of the animal were watched through glass placed over the opening. As soon as insensibility was produced and the dog had fallen down it was removed on to a table. Chloroform was then administered to it on a cloth cap at the top of which a little cotton-wool

[1] This paper was accompanied by a volume of over 200 quarto pages containing details of the experiments.

was stitched. The respiratory movements were carefully watched and the action of the heart (except in a few cases where a portion of the thoracic wall was removed) was observed by the vibrations of a needle thrust into the organ through the chest wall.

One hundred and sixty-four experiments were performed—one hundred and thirty on dogs and thirty-four on frogs. Before describing the experiments we may mention that in no instance, excepting one—viz., Experiment 10—was a dog unintentionally killed by an overdose. In this case, as the animal was very savage, and as it was removed from the box too soon, chloroform had to be vigorously pushed during the struggling stage.

The experiments were conducted with the following objects: (*a*) To observe the effects on the respiration and circulation of chloroform administered in different ways; (*b*) to test the value of the different means of restoring animals after the respiration had stopped; (*c*) to observe the effects of temporary stoppage of the heart, whether naturally or artificially produced.

The following experiments were therefore made: (*a*) Stimulation of the vagus under chloroform, (*b*) administration of enormous doses of chloroform before and after section of vagi, (*c*) administration of chloroform whilst the breathing was irregular and the animal struggling, (*d*) artificial respiration with and without bellows, (*e*) inflation of the lungs with oxygen, and (*f*) injections of ether and strychnine.[2]

Stimulation of the vagus after the respiration ceased, which was tried in numerous cases, showed that the effects produced on the heart were not uniform. (By "respiration ceased" is meant not merely the non-entrance of air into the chest, but the entire absence of all abdominal and thoracic movements.) In some cases no apparent effect was produced on the needle movements; in others the movements were much quickened, but in the majority of cases they were markedly slowed or completely stopped for a longer or shorter period. In twenty-five dogs in which stimulation of the vagus was performed on the first occasion the respiration stopped; eleven recovered and fourteen died. Of the latter there were seven cases in which no slowing effect was produced on the heart and there were only three cases in which stimulation was commenced immediately the respiration ceased. In the eleven that recovered there were two cases in which it was doubtful whether any effect was produced, and two cases only in which stimulation was commenced immediately the respiration ceased. Experiments 8, 9, 12A, 13, 16A, B, C, and D, 18B and C, 24, 26, 28, 59, 72, 107 and 120 show that the stoppage or slowing of the heart which was artificially produced after the cessation of respiration (and which occurred in all but two cases) in no way interfered with, if it did not actually aid in, the animal's recovery. It should also be noted that the stimulation of the vagus was not commenced in every case immediately, but was delayed on an average twenty or thirty seconds after the respiration had ceased. It was found that stimulation during normal anæsthesia did not interfere with the dog's subsequent recovery. These facts show that the temporary stoppage or slowing of the heart, which was almost invariably produced by the stimulation of the vagus whether occurring before or after the cessation of respiration, is *per se* harmless. In support of this truth, which was discovered by the Hyderabad Chloroform Commission, Experiment 50 may be adduced. In this experiment the heart stopped beating for fifty seconds between the cessation of breathing and the commencement of artificial respiration and the dog recovered. When more chloroform was subsequently given till the respiration ceased it again recovered. This shows conclusively that the fact of the heart having stopped is no proof of its weakness, and as we have never found the heart stop even temporarily during anæsthesia, or simultaneously with the cessation of the respiration, in those cases in which both vagi have been divided, whereas it is common in dogs whose vagi are intact, we are led to believe that the stoppage which occurred in this case was purely reflex in origin. With the view of observing whether the heart's action could, apart from reflex stoppage, be arrested temporarily or be affected in any way prior to respiratory failure, we performed several experiments, in which both vagi were divided and the effects of administering enormous doses of chloroform were noted. Experiments 71 and 116, also 109, are good examples. In these cases enormous doses of chloroform were given, but at no time prior to respiratory embarrassment was any feebleness of the needle movements observed. The administration of the largest possible doses of chloroform produced no prejudicial effect on the heart, and it is certain that no amount of chloroform given by inhalation can produce cardiac syncope or any direct effect on the heart until the respiration ceases. The following facts prove this: (1) The heart needle continued beating vigorously for a considerable time after the respiration had ceased; (2) both animals twice recovered spontaneously after the cessation of respiration. Moreover, when the respiration finally stopped for a fourth time in Experiment 116 the needle was still beating vigorously. In dogs, therefore, it is abundantly evident that the heart beats effectively after stoppage of the respiration by an overdose of chloroform and that temporary stoppage of the heart, whether produced spontaneously or artificially, is not a danger but a safeguard. This fact was originally discovered by Dr. Bomford and is strongly insisted upon by the Hyderabad Commission.

We found that when chloroform was given to an animal whilst it was struggling violently and holding its breath the needle frequently stopped for some seconds, either during this period or very shortly afterwards. This was of such frequent occurrence that at first it seemed as though the needle, owing to the violent struggles, had been displaced; but that this was not so is proved by the fact that the needle in the majority of cases, without being removed and reinserted, continued beating regularly later. In Experiment 32 the needle stopped completely for 2 min. 10 sec. during the struggling stage.

In Experiment 116 chloroform was given whilst the animal struggled violently. The effect of this on the needle beats was to make them extremely intermittent and irregular, not only during the struggling period, but more or less throughout the whole Observation A. When, subsequently, both vagi were divided the needle beats at once became regular, showing that the intermittency and irregularity, which were noticed in the first Observation A, could not have been produced by the direct action of chloroform on the heart, but were entirely reflex in orgin.

In Experiment 116 the needle beats were more vigorous in Observation D after the section of the vagi than they were in Observation A, when the vagi were intact, the respiration having stopped in both cases. The irregularity and intermittency of the needle which were noticed in Observation A were undoubtedly due to the fact that chloroform was given continuously whilst the animal struggled violently and the respiration was irregular. One effect therefore of giving chloroform during the struggling stage, or when the breathing is irregular, is to cause inhibition or extreme intermittency of the heart which may last throughout the whole administration, although the breathing may subsequently become regular. We found that after administering chloroform in this way the respiration would frequently stop very suddenly and unexpectedly; especially was this the case in large, strong, healthy pariahs.[3] In all those cases that we failed to revive by pumping in air with bellows one minute after the respiration ceased, chloroform was thus administered with the cap tightly jammed over the face, and artificial respiration was far less successful in restoring these animals than, judging from their size and strength, we should have imagined would have been the case.

There was also another period during which the heart needle would stop temporarily, and this was either a few seconds before, simultaneously with, or immediately after the stoppage of the respiration. These temporary stoppages, which were fairly common, as already mentioned, were undoubtedly due to inhibition of the heart through the vagi, for when these nerves were cut they never occurred.

After the temporary stoppages we found the needle would always go on beating for some time, generally some minutes, after the respiration had ceased. In no single case did the needle ever stop permanently at the same time as the respiration. It was a common occurrence to find the needle beating fairly vigorously, though no pulse could be felt, as in Experiments 13 and 16. The stoppage of the heart needle movements therefore is not necessarily an indication that the heart has failed or is weakened; it may be and frequently

[2] The current from an ordinary induction coil was always employed in these experiments and tested before being used, but it was frequently out of order and always uncertain.

[3] In the only accidental death that occurred chloroform was pushed during the struggling stage.

is a sign of activity of the cardio-inhibitory centre, for we frequently found, when chloroform was pushed on two or more occasions until the respiration ceased, that the heart was much more likely to be inhibited on the first than on the last occasion, and so far from the needle beats becoming less vigorous after increasing doses of chloroform the exact contrary was observed, showing that the temporary stoppage and apparent weakness of the heart's action were brought about by the activity of the cardio-inhibitory centre, which on the later occasions became paralysed, the result being that the beats of the heart became rapid and vigorous and the effect produced was exactly the same as though both vagi had been cut.

In the experiments with artificial respiration dogs were anæsthetised as before until the respiration ceased, and then after varying intervals of time an attempt was made to revive them by pumping in air by means of an ordinary pair of bellows, the nozzle of which passed into an opening made in the trachea. After each inflation pressure was made on the thorax so as to imitate as far as possible natural respiration. Of fourteen dogs that we experimented on in this way, commencing artificial respiration one minute after all movements of the chest and abdomen ceased, ten recovered and four did not. In all the cases chloroform was vigorously pushed with the cap tightly pressed over the face in the struggling stage. We found that artificial respiration with bellows was sometimes successful in restoring an animal some considerable time after the respiration had ceased. In Experiment 41 the animal was twice restored, the first time 3 min. 20 sec. and the second time 6 min. 25 sec. after the respiration had ceased, notwithstanding the fact that in the latter case a large dose of chloroform had been given when the dog was struggling violently. Again, in Experiment 40 a very weak dog was three times resuscitated by artificial respiration, on the last occasion 5 min. 10 sec. after the respiration had ceased. These experiments show that dogs could often be restored some considerable time after the respiration had ceased and that by performing artificial respiration with bellows we found we were able to revive them after a longer interval than was possible by the ordinary manual method, where the longest interval which elapsed was 4 min. 40 sec.

Acting on the suggestion of Mr. Foy, experiments were made with a view to testing the value of oxygen gas in cases of chloroform poisoning. The gas was made by mixing dioxide of manganese and chlorate of potassium in a glass retort which was heated by a spirit lamp. As the gas was generated it was purified by bubbling through water contained in a gas-holder capable of containing 1500 cubic inches. When the receiver was full it was connected by a tube to a pair of bellows, the nozzle of which fitted into an opening made in the trachea. The gas was forced out by pressure of water from above. In this way the oxygen contained in the receiver could be pumped directly into the lungs. After each inflation with the gas pressure was made on the thorax so as to imitate as far as possible natural respiration. The amount of gas used on each occasion varied from 100 to 500 cubic inches. Nine experiments were performed in this manner, and we found that we could only revive three of the nine dogs by artificial respiration with oxygen one minute after the respiration had ceased. Except in Experiment 100, in which a small puppy was twice revived one minute after the respiration had ceased, there was nothing to show that oxygen gas, apart from the expansion of the lungs which was necessarily produced at the same time, had any intrinsic effect in restoring the animal to life. We were never able in these experiments to restore a dog after a longer interval than one minute. Oxygen is therefore clearly not an antidote in chloroform poisoning.

Two experiments were made with injections of strychnine. In the first $\frac{1}{75}$th of a grain was injected forty seconds and in the second $\frac{1}{75}$th of a grain thirty seconds after the respiration had ceased, but no recovery followed in either case.

Twelve experiments were made with a view of watching the effects of subcutaneous injections of thirty minims of ether after the respiration had ceased. We found that of twelve dogs only four recovered, and of these four artificial respiration was practised in three. In other words, only one dog recovered after the injection of ether alone. We frequently noticed that after the injections the needle movements were temporarily quickened, but subsequently stopped abruptly. In some cases injections of ether produced no obvious alteration in the needle beats. There was nothing to show that injections of ether produced the slightest effect in restoring the animal. On the other hand, the fact of there being only one recovery and of the needle stopping abruptly undoubtedly pointed to an injurious effect. It is obvious that injections of ether are useless, if not positively harmful, in overdosing with chloroform.

Experiments 121 to 124 show the effect of injections of chloroform into the cavities of the ventricles. Experiments 125 and 126 show the effect of these injections into the ventricular substance. In both series weakness and intermittency of the heart's action were produced, but not sudden stoppage. Experiment 134 shows that the final effect of injecting ether into the substance of the heart is exactly the same as that of chloroform. Experiments 131 and 133 show the effects of filling the pericardium with chloroform and ether respectively; no visible prejudicial effect on the movements of the heart was observed in Experiment 131 until artificial respiration was stopped, and though the pericardium was filled with chloroform the heart continued to beat vigorously for twenty-one minutes. Experiment 135 shows the effect on the heart of blowing in concentrated chloroform.[4] In this case each time concentrated chloroform was pumped in by the bellows the veins on the surface of the ventricle became prominent, the ventricular muscle became relaxed, and the beats had more resemblance to a flap than a true contraction.

The experiments on frogs' hearts show that both auricles and ventricles will go on beating for a considerable time whether the heart is soaked in liquid chloroform or exposed to its vapour. The only occasions on which the hearts were found to be quite motionless on opening the thorax were in Experiments 156 and 162. Here the hearts were found to be enormously distended, showing that they had failed through the respiration.

GENERAL CONCLUSIONS.

Our experiments prove what Bernard has shown and what Dr. Lauder Brunton and others have long insisted upon—viz., that chloroform is an irritant and kills protoplasm. Frogs' hearts hung up in the vapour of chloroform or immersed in the liquid ceased to beat, and the cessation then took place more rapidly than when they were suspended in air or immersed in water. When chloroform was injected into the heart substance of dogs it irritated and probably coagulated the protoplasm and the organ was rapidly brought to a standstill. Precisely the same effects, only less intense, were produced with ether, and similar effects, only much more intense, were produced with dilute hydrochloric acid. Many irritants act like chloroform. The peculiarity of chloroform is that its undiluted vapour seems to be irritating in much the same way as the fluid, which is not the case with other irritating substances, such as alcohol or dilute hydrochloric acid. The irritating and coagulating action cannot occur in the ordinary use of chloroform, and there is no more fear of coagulation of the heart than there is of coagulation of the general muscles, or of sloughing of the toes or stomach, or of necrosis of the tissues generally—all of which may be produced by chloroform locally applied.

The entire series of experiments tends to show that, although hearts placed in abnormal conditions may be weakened and stopped by overdoses of chloroform, under no circumstances can sudden cardiac failure and death from reflex stoppage take place; nor, up to the cessation of respiration, can any direct effect be produced upon the heart by chloroform unless it be injected into its substance or into its cavities. In those experiments where both vagi had been divided no obvious effect could be produced on the heart beats by chloroform, administered in the largest possible doses by inhalation, before failure of the respiration; and finally, in the experiments in which the thorax was opened and artificial respiration was necessary throughout, if this was discontinued even for a brief interval, the action of the heart was quickly arrested. It is therefore clear that no amount of chloroform given by inhalation can act prejudicially and directly on the heart muscle before interfering with the breathing, and in practice the remote possibility of

[4] Two experiments were subsequently made in which chlorine was blown into the lungs, and in both cases the contractions rapidly became feeble and ineffective. The right ventricle remained full, though not distended. When the chlorine was discontinued the beats regained their strength, and *vice versâ*. In these two cases and in the case of chloroform the results were probably caused by interference with the respiratory function.

danger arising in this way is so infinitesimal that it may be entirely disregarded.

Our experiments lay no claim to originality, but as far as they go they altogether confirm the results arrived at by the Hyderabad Chloroform Commissions.

Upper Gloucester-place, Baker-street, W.

CASE OF

SPONDYLOLISTHESIS ASSOCIATED WITH PROGRESSIVE PARAPLEGIA; LAMINECTOMY.

BY W. ARBUTHNOT LANE, M.S. LOND., F.R.C.S. ENG.,

ASSISTANT SURGEON TO GUY'S HOSPITAL AND TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.

A WOMAN aged thirty-five was admitted into Guy's Hospital under my care on March 24th, 1893. She stated that she had always been a hard-working woman, performing usually the duties of a general servant. Twelve years ago she had a master who was a lunatic and whose delusion consisted in believing that he was always playing cricket. He used to go about with a very heavy stick and struck at articles of furniture imagining them to be cricket balls. On several occasions he had come behind her unexpectedly and had struck her violently in the lower part of the back with this stick. She had suffered great pain from the blows, and, as far as she could remember, she localised the parts struck as the lower part of the lumbar spine and the buttock. She said that the blows that were struck with the heavy stick were so severe that if she had not been supporting herself she would have been knocked down. Up to this time and for about five years later she had been a strong robust woman and had felt no permanent effect from the injuries received, though she seemed inclined to ascribe her present condition to them. As far as she was aware her attitude and gait differed in no way from those of other women. About six years ago she noticed that her walk was insecure and that she rolled about, especially to the right side. Her back also became weak, and though she suffered no pain there she found a difficulty in carrying heavy things up and down stairs especially. This weakness of her back and insecurity on her legs increased steadily, and she found that the right leg was much less reliable than the left. A deformity of the lumbar spine had also been observed during the last nine months. About a year ago she was no longer able to walk. Six months ago she was admitted to the Camberwell Infirmary, where she remained till her admission into Guy's Hospital. Recently the right foot had become extended and the toes flexed. She had found that sensation had steadily diminished in the lower extremities. Although I have questioned her most closely I cannot obtain any evidence of deformity or peculiarity in gait prior to six years ago. She had never suffered from pain in her limbs or in her back.

On admission the patient looked older than her age. The form of the lumbar spine was altered, being somewhat convex posteriorly, the prominence of the convexity corresponding to apices of the spinous processes of the third and fourth lumbar vertebræ. These seemed on an abnormally low level as compared with the iliac crests. The spine of the fifth lumbar vertebra could be felt only with difficulty, and seemed to be unusually deeply buried. Sensation of touch, of heat, of pain and of cold was impaired to some extent over almost the whole of both lower extremities, though in parts it was very slightly affected. This was much more marked in some places, as, for instance, below the right knee and especially in the foot, and again in parts of the buttock and about the anus. It was very difficult to define with any accuracy the limits of the more or less insensitive areas and the degree of the loss of sensation. It was certainly very much more deficient on the right than on the left side. There was slight œdema of both legs below the knees and especially of the right. The circumference of the calf of the right leg measured 10½ in., and that of the left 11¼ in. The right foot was extended and the toes were somewhat flexed. It was not possible to overcome this attitude completely by manipulation. The patient was able to flex and extend the hip-joint and the knee-joint with a considerable amount of power. The force that could be exerted spontaneously over the foot and ankle was fair, though subnormal, on the left side, but was practically *nil* on the right. The knee-jerks were completely absent on both sides, and it was not possible to obtain any ankle clonus. A plantar reflex was obtained, but of an indefinite character. It was obvious that the cauda equina was compressed, and compressed very unequally. Beyond the fact of the spinous process of the fifth lumbar being apparently somewhat deeply placed there was nothing to suggest anything abnormal in the lumbo-sacral joint. This was rendered also less definite by the fact of the spinous process being abnormally developed even for a woman.[1] Though there was much evidence, both in the history of the case and in the condition of the patient, to contraindicate compression paraplegia, due to spinal caries, I came to the conclusion that this was the most probable cause. In any case an operation seemed advisable. Consequently, on March 28th I removed the spine and lamina of the fourth lumbar vertebra, when it was quite obvious that the compression was below this level, because the dura matral sheath was distended with fluid. From the great density of the spinous process and lamina I concluded at once that there was no carious focus in the vicinity. On attempting to remove the lamina of the fifth lumbar vertebra, after cutting off its very prominent, largely developed and dense spinous process, it was found to be placed in the upper part of the sacral canal quite in front of its normal position. It was removed piecemeal with great difficulty, when the dura matral sheath of the cauda equina on the right side was seen to have been so severely compressed as not to expand when the bone pressing on it had been removed, nor was it possible to separate the opposing dura matral surfaces with dissecting forceps. The left half filled up freely at once with cerebro-spinal fluid when the segment of lamina compressing it was cut away. The fifth lumbar nerve on the right side seemed to be compressed between the lamina and the body of the sacrum, but I was not sure whether the corresponding nerve on the left side had sustained any pressure or not. The superior and posterior margin of the body of the first piece of the sacrum stood out prominently and sharply, and the posterior surface of the body of the fifth lumbar vertebra could be felt about three-quarters of an inch in front of its normal position. There was, as far as could be seen, no solution of continuity of the neural arch at any point on either side, though on both sides it was deeply channelled by the articular processes of the fourth lumbar and first sacral vertebræ. At the same time, at such an operation it was impossible to follow out details with the same accuracy that a dissection allows of. No evidence of any fracture was found. Beyond the excessive amount of forward displacement the conditions discovered differed in no manner from the cases of spondylolisthesis which I have dissected and described. The wound was closed and a drainage-tube was left in for twenty-four hours. This was removed and the aperture was accurately closed with a suture, primary union resulting. It was obvious that the alteration in the character of the lumbar curve was consequent upon the forward displacement of the fifth lumbar vertebra, and was brought about mechanically to obviate the slipping forwards of the vertebra by a displacement backwards of the centre of gravity of the superjacent trunk.

This case is obviously of great interest from its rarity. I am not aware of any reported case of spondylolisthesis of the fifth lumbar vertebra in which pressure on the lumbar or sacral nerves was described. When working at the changes which the skeletons of labourers undergo I found that in fully developed coal heavers spondylolisthesis is the normal condition and that in other occupations a similar displacement existed. The character of the displacement varied in different individuals with the particular mode of transmission of pressure. In the coal heaver,[2] for instance, the displaced body of the fifth lumbar vertebra was almost completely ankylosed to the sacrum, the fibro-cartilage being practically absent, whilst in other occupations[3] the spondylolisthetic vertebra formed an arthrodial joint with the sacrum. In other occupations, again, I showed that backward displacement of the body of the fifth lumbar[4] occurred normally—a condition which had not been previously described or observed.

[1] I have described in a paper in the Transactions of the Obstetrical Society, 1887 (the Factors which Determine the Variations in the Form of the Male and Female Pelvis), and in other papers the different modes of force-transmission through the lumbo-sacral joint in the two sexes and the consequent difference in the anatomy of these bones and joint.

[2] See Fig. 3, Plate XIII., in the Transactions of the Pathological Society, 1885.

[3] See Fig. 2, Plate XIII., in the Transactions of the Pathological Society, 1885.

[4] See Fig. 1 of the same plate.

In such cases a large proportion of superjacent weight was transmitted through enormously hypertrophied spinous processes. Examples of these several conditions are illustrated in the paper referred to. Neugebauer of Warsaw has written very largely upon the subject of spondylolisthesis. He regarded the deformity as a rare one, and was only able to find one specimen of it in the museums of England. It is difficult to understand this, since, as I have already stated, the condition is normal to the anatomy of many labourers. As he has paid such special attention to the subject I cannot do better than quote his views[5] upon the causation of the displacement. "Drei Möglichkeiten sind heute angenommen, die zur Elongation prädisponiren: Mangel des knöchernen Zusammenhanges zwischen vorderer und hinterer Wirbelbogenhälfte (1) in Folge von Defect der fötalen knöchernen Verschmelzung zwischen dem hinteren und vorderen Knochenkern des Wirbelbogens (natürlich ein- oder beiderseits); (2) in Folge von Fractur an dieser Stelle (hypothetisch); (3) in Folge von Druckusur bei andauernder Ueberlastung."[6] For full clinical and pathological details I would refer to Neugebauer's elaborate work on spondylolisthesis.

In the case I have described I am inclined to ascribe the causation of the deformity to changes induced by work though it would not seem improbable that the blows she received on the lumbar spine diminished the security of the lumbo-sacral articulation and so facilitated the subsequent development of the deformity. Another point of interest is, I think, the complete absence of the deep reflexes of the knee and ankle, whilst sensation was but slightly impaired.

St. Thomas's-street, S.E.

ADMINISTRATION OF OXYGEN AND HYPODERMIC INJECTIONS OF STRYCHNIA IN ACUTE LOBAR PNEUMONIA.

BY FREDK. W. SAUNDERS, M.B., B.C. CANTAB. &c.

THE patient, a woman aged thirty-three, came under my care on Jan 14th of the present year. The history given was as follows: Exposure to cold and wet whilst skating on Jan. 7th; fresh exposure on the following day; catamenia commenced on the 9th and ceased on the 10th, on which day she had a shivering fit and took to her bed, passing a very restless and sleepless night. On the following day there was vomiting. There was a slight amount of cough, but no expectoration. She remained in bed until the 14th, when I saw her at midday. She presented a very flushed face, the skin was dry and burning, and she complained of pain in the back, with headache. The temperature was found to be 103·6°, the pulse 140 and respiration 44. On examination there were exaggerated breath sounds over both apices in front, the first sound of the heart being embarrassed, and the second sound greatly accentuated. Vocal fremitus was much increased over the left base, extending up to the spine of the scapula and towards the mid-axillary line on that side, over which area there were well-marked dulness, indistinct crepitant râles, bronchial breathing and bronchophony. The right lung was clear, the tongue was very coated, and the bowels were open on the previous day. At 7 P.M. the physical signs remained unaltered; the pain in the back was much less, there was no headache, the temperature was 103·2°, the pulse 140, and respiration 40. There was a slight amount of cough with rusty expectoration. There was no herpes labialis. The urine was loaded with lithates of a high colour, but no albumen was present.

Jan. 15th.—The patient appeared better in the morning, having had some sleep; the temperature was 103·3°, the pulse 120 and much stronger, and respiration 40. The first sound of the heart was clearer. There was no expectoration and there was but little cough. She was taking nourishment very well. At 7 P.M. the physical signs were as before, with the addition of a pleuritic rub all over the affected area. Temperature 102·8°; pulse 140; respiration 45. The lips were of a darker colour than formerly. At 9.30 P.M. I found the patient in a comatose condition, the lips being purple, the face and fingers deeply cyanosed, the pupils widely dilated and reacting very feebly to light, the conjunctival reflex abolished, the pulse 160 and running, and respiration 60 and chiefly diaphragmatic; the first sound of the heart was inaudible; the second sound was laboured and greatly accentuated. She was given hypodermic injections of $\frac{1}{75}$ gr. of sulphate of strychnia and ten minims of brandy, which were followed by an immediate improvement in the heart sounds and pulse. At 10.30 P.M. the hypodermic injections were repeated, and half a pint of strong hot coffee with two ounces of brandy were injected into the rectum. At 11.30 P.M. the strychnia was again given. After each of the injections the improvement in the quality of the pulse was most marked, the cyanosis also being somewhat diminished. About this time I was able to obtain a cylinder of Brin's oxygen. The patient was made to inhale a fairly strong current of the gas through a glass tube inserted between the teeth and connected with the supply by means of an indiarubber tube. In half an hour the cyanosis was much less marked, the pulse was 130 and fairly strong, respiration 50, and the first sound of the heart was coming back.

16th.—At 1.30 A.M. she exhibited movements of the arms and legs, and the conjunctival reflex was regained, the pupils reacting well to light, whilst the cyanosis continued to decrease. At 2 A.M. she became delirious, with the pulse 120, the cyanosis almost gone, and respiration 35. Half an hour later she was quite conscious and able to take food. Subsequently the gas was given for fifteen minutes every hour until 1.30 P.M., when the temperature was 98·4°, the pulse 124 and respiration 30. At 10 P.M. the temperature was 100°, the pulse 110 and respiration 30, what expectoration there was being distinctly rusty.

17th.—At 10.30 A.M. her colour was greatly improved. The gas was given for ten minutes twice during the night. Temperature 101°; pulse 116; respiration 33. On examination soft bronchial breathing was heard all over the affected area, with sharp crackling râles and no pleuritic rub. The right lung was clear. Dr. Gee kindly saw the case with me and encouraged me to persevere with the treatment then being employed. At 5 P.M. the cyanosis was returning, with the pulse 122 and respiration 40. Oxygen was given continuously for an hour and a half with very marked improvement in her condition.

18th.—A similar improvement resulted on administering the gas, the twitching of the alæ nasi and at the angles of the mouth, disappearing, together with the cyanosis. At 11 A.M. the heart suddenly began to fail, with the pulse about 180; the first sound of the heart was inaudible, and the breathing was very short and quick; there was recession of the skin covering the sides of the trachea and neck, with well-marked recession between the ribs. Oxygen was given continuously for four hours, together with (in all) three hypodermic injections of strychnia and brandy. At 3 P.M. the heart was beating regularly and well, the first sound being clear and distinct. Temperature 100·4°; pulse 110; respiration 28. At 6 P.M. a fresh attack of heart failure took place, the recession being even more pronounced than before. A similar line of treatment gave equally satisfactory results, the temperature becoming normal at 11.30 P.M., with the pulse 112 and respiration 28.

19th.—Examination of the affected lung revealed an improvement in its condition; the dulness was much diminished and there were loud gurgling râles all over the affected area. There was a good deal of cough, but very little expectoration. The general condition was very much improved, the temperature being normal, the pulse 108, and respiration 25, and she was taking nourishment very well. At 9 P.M. the patient became greatly excited, with muttering delirium, and she made attempts to get out of bed. At midnight the temperature was 101°, the pulse 150 and respiration 30.

20th.—At 4.30 A.M. the patient was in a state of maniacal excitement. The head was very hot and dry, the conjunctivæ were suffused, the pupils were somewhat contracted, and the pulse was 180 and very small. The first sound of the heart was unrecognisable and respiration 28. There was ceaseless rocking of the head, but no strabismus. There was some evidence of left otitis media. It was almost impossible to come to any opinion as to the presence of optic neuritis, owing to the restless condition of the patient. Her hair was cut close to the scalp, an ice cap was applied, and drachm doses of bromide of potassium were injected into

[5] St. Petersburger Medicinische Wochenschrift, Nos. 7 und 24, 1889. Congress russischer Aerzte zu St. Petersburg (vom. 3.–10. Januar, 1889).

[6] "Three possibilities are admitted to-day to predispose to elongation: defect of the osseous connexion between the anterior and posterior halves of the vertebral arch (1) in consequence of defect of the fœtal osseous union between the posterior and anterior osseous nucleus of the vertebral arch (of course on one side or on both); (2) in consequence of fracture at this point (hypothetically); (3) in consequence of erozion by continuous pressure."

the rectum every four hours. In the afternoon Dr. Gee again kindly saw the case with me and confirmed the diagnosis of meningitis, holding out but little hope of ultimate recovery. Owing to the extreme cardiac debility he would not, however, recommend any other line of treatment. Towards the evening the condition of the patient became more alarming, the bromide of potassium having little or no effect. She complained somewhat of pressure over the parietal bones. There was ceaseless noisy delirium, the pulse being over 180 and running, the pupils widely dilated and equal, and respiration 30.

21st.—At 5 A.M. I decided to give a hypodermic injection of $\frac{1}{10}$ gr. of hyoscyamine. In half an hour she was almost comatose, with an extremely small pulse, respiration being unaffected. Epileptoid convulsions came on, lasting an hour, and at 7 A.M. she passed into a semi-conscious state and appeared at the point of death. She again rallied after a hypodermic injection of brandy and strychnia, and subsequently she was able to take food by the mouth for the first time for some hours. Her pulse was now 110 and the temperature was subnormal. During the day she was quite conscious and sensible, but in a very nervous condition. Towards evening the former symptoms of maniacal excitement again came on, with a fresh rise of temperature, which was 101°. Dr. Ferrier kindly saw her with me at 9.30 P.M., agreeing in the diagnosis of meningitis, but he thought that optic neuritis was not present. Counter-irritation was carried out behind the ears and on the scalp with croton oil liniment, and half a drachm of paraldehyde with ten grains of antipyrin were injected into the rectum. After an hour she became semi-comatose and cyanosed, with very rapid breathing and the pulse uncountable. A hypodermic injection of fifteen minims of sulphuric ether caused a fresh rally.

22nd.—About 9 A.M. another epileptoid seizure took place, with external deviation of the left eye. At midday she partly regained consciousness and died at 12.20 P.M.

From the 18th I was unable to obtain a specimen of the urine, everything being passed under her.

South Kensington.

COMPOUND COMMINUTED FRACTURE OF THE SKULL, WITH INJURY TO BRAIN; RECOVERY.

BY W. C. D. PRENDERGAST, M.D., M.CH. R.U.I.

ON January 4th, 1889, I was summoned to see a young man aged eighteen years, a taker-off at the Ubberley Pit, near Hanley. Whilst working at the bottom of a dip he was struck, through an empty waggon hook slipping off, by a loaded waggon weighing 18 cwt. The length of the coal dip was ten yards, with a fall of eighteen inches to the yard. He was conveyed home, where I first saw him at 7 A.M. He was completely unconscious and bleeding profusely. On examining him I found that the scalp from ear to ear had been lacerated and stripped back, a portion of the periosteum adhering. A part of the skull-cap, comprising a fragment of the frontal bone, together with that portion of the middle and upper third of both parietal bones, was fractured and detached from the surface of the brain, remaining attached behind by a strip of bone at the parietal eminence. A small portion of brain matter, with adherent pia mater, was also discovered in the wound. Both body and wound were grimy with finely pulverised coal dust. The wound was washed carefully with a carbolised solution. The bones were replaced over the brain, some small fragments of bone being removed; the scalp, with the torn periosteum, was brought together with about twenty sutures. On the left side, at the anterior superior angle of the parietal bone, a portion of the scalp was completely torn away, leaving no possible chance of reflecting the scalp over the fractured bone. Compresses of carbolised solution and a head bandage completed the dressings. There was continuous oozing from the torn vessels of the diploë, so much so that, owing to the difficulty of controlling this form of bleeding, death from hæmorrhage seemed likely to ensue. Some trouble was experienced in cleansing the wound, on account of the presence of the fine coal dust. I have invariably found, however, that its presence does not interfere materially with the union of wounds. Nearly all incised wounds of colliers inflicted whilst at work heal by first intention. A tattoo mark is left which distinguishes the collier from all other workmen.

On Jan. 5th there was a slight return to consciousness, as was evidenced by the ability to swallow a little soda-and-milk, which was ordered, together with small doses of brandy, to rally the patient from the shock and the persistent hæmorrhage. There was no vomiting. The pupils were slightly dilated, but were acting.

Jan. 6th.—The dressings were removed and the hæmorrhage had nearly ceased. There was slight delirium at night, vomiting being absent. The wound was dressed with carbolised oil and absorbent cotton wool.

7th.—Delirium at night was slight. Food was taken better and the bowels were evacuated. Temperature 99·2°; pulse 126.

8th.—Temperature 99·4°; pulse 112. He slept better and food was taken well.

9th.—A portion of the scalp wound had healed by first intention. Five sutures were removed.

11th.—Suppuration showed itself at one or two points.

12th.—The remaining sutures were removed, the appetite was better, and sleep was prolonged without delirium.

13th.—The major portion of the scalp wound had healed by first intention. In one or two places, however, the bone was exposed; these in the course of a few days were covered with soft velvet-like granulations. From the points mentioned under Jan. 11th there was a continuous oozing of pus, pointing to the presence of some decaying fragments of bone. The case after this was treated as one of necrosis with suppuration.

About the end of January pain was complained of. There were a rise in the temperature and some slight vomiting. The scalp was shaved on Feb. 14th and at one spot, where the pain was greatest, an incision was made down to the bone. Some matter issued, and on probing a loose but not detached piece of bone was felt. The incision was kept open.

March 26th.—I cut down on the detached bone and removed it. It was a fragment of the frontal bone.

April 2nd.—I removed the remaining loose fragments of the frontal bone.

25th.—I cut down and removed a portion of the parietal bone, including both the internal and external table, measuring two inches and a half in length and one inch and a quarter in breadth.

May 8th.—Another fragment of the parietal bone was removed, corresponding to the left anterior superior angle, and comprising both the internal and external surfaces.

June 10th.—A large fragment of the parietal bone was removed, measuring two inches in length and three-quarters of an inch in breadth, the major portion being the external surface only.

July 2nd.—Some smaller fragments were removed.

27th.—A large fragment of the parietal bone was removed. This was the last operation. The whole wound, together with the incisions, healed continuously and no further suppuration was apparent. The patient began to go out, rapidly regained strength, and about the end of August was able to resume work. Since that time he has enjoyed excellent health. A few months ago a few spicula of bone were thrown out. At present the whole tract is healed and the patient regularly performs his arduous work as a miner. On stooping he complains of a slight sense of giddiness.

Remarks.—The above case illustrates remarkably the possibility of recovery after the most extensive injury to the head. In this case there was an extensive scalp wound, destruction of a portion of the scalp and extensive fracture, with exfoliation of a large surface of bone. One vital factor, however, was absent; there was no pressure on the brain from depression of the cranial bones. Another point worth noticing—although this may not be a typical case to illustrate it by—is that fine coal dust, instead of being a deterrent to the healing of wounds, appears to have the opposite effect.

Hanley.

THE MATTHEWS DUNCAN MEMORIAL.—A meeting of the subscribers to this memorial will be held on Monday next, when the report of the committee will be presented. It appears that the sum of £631 9s. has already been received and has been invested, after certain necessary expenses had been paid, in the names of three trustees. The first award of the gold medal and prizes will be made in June next.

A CASE OF SUPPURATION IN THE ETHMOIDAL CELLS.

BY W. R. H. STEWART, F.R.C.S. & L.R.C.P. EDIN., M.R.C.S. &c,

AURAL SURGEON TO THE GREAT NORTHERN CENTRAL HOSPITAL AND SURGEON TO THE LONDON THROAT HOSPITAL.

A MARRIED woman was sent to me at the Great Northern Central Hospital by my colleague, Mr. Morton, in the beginning of 1891. She told the following story. Twenty years ago she contracted scarlet fever. When convalescing a large abscess formed in the corner of the right eye, and she also experienced slight deafness. The abscess in the eye burst without surgical aid, and both ears discharged incessantly for a week and have done so from time to time ever since. She experienced no further trouble from the eye for ten years, but suffered occasionally from very severe

FIG. 1.

headaches. When out one day she suddenly felt a most violent pain, which lasted for a week, and during that time she could not sleep or lie down and was at times unconscious. She consulted an oculist, who told her that she had a tumour at the back of the eye. He incised a hard substance in the corner of the eye, when a large quantity of pus came away. Eighteen months afterwards the eye was again very painful and the swelling was once more opened, but with little relief. The pain in the head was very severe for some time, and the swelling was opened a third time. Since then, nine years ago, the pain in the head from time to time had been almost unbearable, lasting from a few hours to two or three days. The swelling of the forehead and temple was always much inflamed whilst the pain lasted. Five years ago, after a very bad attack of pain, the patient used a strong lotion, as hot as possible; this brought away quantities of pus down the nose into the throat. Large masses had since come down into the throat. During the last few months the substance in the corner of the eye had become larger. The eye itself was more prominent, the attacks of pain were more frequent, and affected the teeth so much at times that she could not bite anything. The parts seemed numb when not painful.

When I saw the patient two years ago the right eye was pushed outwards and downwards, protruding to a considerable extent, and there was a round swelling in the interior and superior corner of the orbit (Fig. 1). The canaliculi had been slit up and there was some discharge oozing from them. On examining the nose a large swelling occupied the place of the right middle turbinate bone which to the probe felt hard and tense. The naso-pharynx was free. Under an anæsthetic I punctured the turbinate enlargement with a trocar and on inserting my little finger into the nostril the tumour crackled up before it and I was enabled to pass the finger on into the orbit. I therefore made a free incision into the internal and superior corner of the orbit and found a large amount of dead bone and the orbit full of stringy pus which was pushing out the eyeball; the pus had also hollowed out a cavity in the direction of the frontal sinus into which I could insert the tip of my little finger. All dead bone was removed and the orbit washed out for about a quarter of an hour with a warm boric acid solution until the pus and débris had been entirely cleared out. A large drainage-tube was then inserted into the nostril and brought out through the wound at the corner

FIG. 2.

of the orbit. The patient did remarkably well, and now, two years after the operation, the nose remains free. The eye has gone quite back to the middle line, though it has not quite recovered its proper level (Fig. 2). There is slight hyperæsthesia round the orbit. The patient was seen by the late Sir W. Bowman with Mr. Morton before she came under my care, and he pronounced it a case of suppuration in the posterior ethmoidal cells. The case was shown at the February meeting of the North London Medico-Chirurgical Society.

Devonshire-street, W.

THE BRISTOL EYE HOSPITAL. — A new wing to this institution was formally opened by the Duchess of Beaufort on April 20th. The building comprises three storeys, and every care has been taken to promote the comfort of the blind and partially blind. To the wing an annexe has been added fitted with lavatories and other conveniences specially adapted for the blind. Two summer houses have been erected on the adjoining lawn. The interior of the building is painted in light colours, white and yellow predominating, thus making the rooms as cheerful as possible for the inmates.

A CASE OF CORNET PLAYER'S CRAMP.

BY WILLIAM ALDREN TURNER, M.D., M.R.C.P. LOND.

THE list of occupation-neuroses (Beschäftigungs-Neurosen) does not include, so far as I can ascertain, an instance of the condition illustrated by the following case, nor is the patient himself aware of the occurrence of a like affection amongst his professional brethren:—A man aged twenty-nine has played the cornet as a means of livelihood since he was nine years of age. For ten years he was in the band of the Coldstream Guards, but for the last few years he has devoted himself to orchestra and solo playing. About two years ago he noticed that he was unable to sound certain notes from an inability to direct the movements of his tongue for that purpose. This condition has remained more or less constant until the present time. The patient gives a highly intelligent account of his condition, which is as follows: He is unable to make certain movements of the tongue which are essential for the acts known as "single, double and triple tonguing," and which may be graphically represented by the signs "tū;" "tū kū;" "tū tū kū" respectively. This movement is readily imitated by imagining a hair on the tip of the tongue which one is endeavouring to remove by inserting the point of the tongue between the lips and blowing. An interesting feature in connexion with the case is that he can perform these movements readily and easily in his own room when practising or when allowed his own time, but he cannot do so when suddenly called upon by the conductor's bâton. He has also noticed that after playing for some time the condition of his tongue improves instead of becoming worse. In all other actions, both in playing the cornet and otherwise, the movements of the tongue are perfectly good. At no time was there any pain in it. Physical examination showed that the tongue was large, atonic and somewhat indented at the margin by the teeth, but this condition improved very much under the influence of strychnia and dilute hydrochloric acid. There were a few fibrillary tremors towards the point. The tongue reacted normally to galvanism and faradaism. There was no affection of the lips or soft palate, and the linguals and labials were well formed. Both knee-jerks were equal and of normal force. The patient has always had good health; he is a non-smoker and temperate. There is no known history of any neurosis in the family. He is unable to ascribe any exciting cause for the affection except that at its outset he was in feeble health after a somewhat severe attack of influenza and was at the same time busily engaged in his professional work.

The only movements of the tongue which are implicated in this case are those essential for the production of certain (staccato) notes upon the cornet, hunting-horn, or other wind instrument; these movements have been acquired, and they are the most complex which the players upon wind instruments require to produce. In other words, certain cell-groups subserving the movements of the tongue have been educated by practice for the perfecting of certain actions, all the other more natural movements of the tongue being unimpaired. It has been pointed out that if in the occupation-neuroses the affected movements are fine (e.g., in writers, pianists, telegraphists &c.) these special movements only are implicated, whilst if the movements are coarse (as in hammermen, treadlers &c.) other actions than that of the occupation are impaired. For example, the patient suffering from writer's cramp can, as a rule, readily work the typewriter or play the piano, or, as Dr. Poore[1] has shown, even write with a pencil; but the sufferer from treadler's cramp has great difficulty in going upstairs.[2] The probable explanation of this is to be found in the fact that the fine movements required in writing, piano-playing &c. are complex and special movements only acquired by education and practice, whilst the coarse movements of the hammerman and the treadler, although used by them in an exaggerated and altogether abnormal way, are those which are normally and daily performed in the ordinary habits of life. Hence one has to look for the cause of the occupation-cramps in fatigue, nutritive impairment, or even temporary paralysis of cell groups: either those which, having been specially educated for a particular action, are thereby more prone to fatigue, or those which, regulating certain normal movements, have been worked to excess. In the case directly under discussion fatigue has probably caused the defective action of the cells regulating the special movements, as there was no alteration in the electrical reactions of the lingual muscles; that an organic alteration in the nerve cells may occasionally occur in the occupation-cramps is apparent from the decided electrical alterations which have been observed in well-recorded cases. I am indebted to Dr. Ferrier for the opportunity of studying this case.

Queen Anne-street, W.

[1] Medical and Chirurgical Transactions, vol. lxi.
[2] Rivers: Brain, vol. xiv., p. 110.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL AND THERAPEUTICAL.

ENTERIC FEVER *v.* SIMPLE CONTINUED FEVER: A QUESTION OF NOMENCLATURE.

BY SURGEON-CAPTAIN H D. ROWAN, ARMY MEDICAL STAFF.

IN the course of Dr. J. Mackie's observations on the prevalence of typhoid fever amongst British soldiers in garrison in Egypt he states his belief that "simple continued fever is, in general, a mild, non-fatal form of typhoid fever, and probably the precursor of a severer form to follow."[1] Such a statement as this raises a question of nomenclature the settlement of which is of the highest importance for the study of enteric fever. Until we can differentiate between simple continued fever and enteric fever the statistics on the prevalence and mortality of the latter disease are practically worthless. Possibly many of the cases of simple continued fever might be relegated to the category of enteric fever; but there would, I think, still remain the large majority of cases which have no such causation, but are due to the effects of heat. This, I think, is the only admissible interpretation of the epidemic which occurred at Ferozepore in the Punjaub in 1889, to which the following table refers:

	April.	May.	June.	July.	Total.
Simple continued fever	52	11	105	82	= 250
Enteric fever	10	15	4	2	= 31
Heat apoplexy	—	—	17	—	= 17

Such a sequence of events is not uncommon. I have selected this epidemic because it is one that came under my personal notice. The following features were common to all the 250 consecutive cases of simple continued fever, and they are, I think, sufficiently distinctive to prevent confusion between it and enteric fever: (1) Simple continued fever was most prevalent in June and July (*after*, not preceding, enteric fever); (2) it was associated with excessive heat (note the occurrence of heat apoplexy); (3) the average age of the patients was twenty-seven years; (4) the average Indian service is two years and three-twelfths; (5) the average duration in hospital was nine days; (6) the symptoms were fever (from one to three days), headache, insomnia, dilatation of pupils, frequent micturition &c.; and (7) the mortality was *nil*. I do not know whether these are the invariable characteristics of simple continued fever. I have enumerated them because they help to define what is not uncommonly meant by the term, and if any further vitiation of statistics is to be prevented some such definition of simple continued fever (more appropriately called "thermic fever") is indispensable.

Bradford.

[1] THE LANCET, Jan. 28th, 1893.

SMALL-POX IN THE VACCINATED AND THE UNVACCINATED.

BY N. S. MANNING, F.R.C.S. IRELD., MEDICAL SUPERINTENDENT, CITY HOSPITAL, BIRMINGHAM.

THE following notes may probably be of some interest as the cases are typical examples of what constantly occurs in the treatment of small-pox:—

CASE 1.—A girl aged eleven years. She was vaccinated in infancy; there were four scars; the area was 1·07 square inch, being shallow and badly foveated. The patient was

admitted to the City Hospital, Birmingham, on March 21st, 1893. The eruption consisted of a few papules on the face and forearms, which never developed into true vesicles. She had no symptoms whatever *after* the appearance of the eruption.

CASE 2.—A boy aged three years and a half. He had not been vaccinated. The patient was admitted to the hospital on March 22nd. The eruption was confluent. He died after great suffering on March 31st. The photograph, of which the engraving is a copy, was taken on March 28th,

being the thirteenth day of the disease in Case 1 and the tenth day in that of Case 2. The patients, who were sister and brother, contracted the disease from the same source and were subjected to the same surroundings and influences in every particular except that the girl had had an attack of scarlet fever some months previously, from which she was just convalescent.

Birmingham.

GENERAL EMPHYSEMA AS A RESULT OF PULMONARY TUBERCLE.

BY J. REGINALD FULLER, M.R.C.S., L.R.C.P., L.S.A. LOND.,
SENIOR RESIDENT MEDICAL OFFICER TO THE CHILDREN'S HOSPITAL, BIRMINGHAM.

A CHILD aged four years was admitted to the Children's Hospital on March 14th, 1893, suffering from pulmonary tuberculosis. The family history showed a tuberculous tendency. The present illness had commenced fifteen weeks previously with gradual wasting, cough, sweating and the ordinary signs of tubercle. There was no whooping-cough or any other disease that would cause the child to strain. On admission the patient was much emaciated, and was affected with a constant dry hacking cough and night sweats; but there was no hæmoptysis. On examination there were hurried respiration, impaired resonance at the apices of both lungs and over both backs; and marked tubular breathing at the back, with moist sounds, and vocal resonance was apparently increased. On March 18th emphysema appeared suddenly, at first in the upper part of the back and neck; thence it spread rapidly to the face, eyelids and forehead, completely closing the eyes, and downwards along the whole trunk to the scrotum, bounded on each side by Poupart's ligament and behind by the rim of the pelvis. The time from the first appearance of the swelling to its full development was under two hours. The whole appearance of the child was altered; he appeared to be nearly twice his previous size. The eyes were quite closed. The swellings about the body were more marked in the flanks and scrotum. Pricking the swellings was followed by re-distension in a very short time. The patient suffered much from dyspnœa and the cough was very troublesome; there was no apparent impulse in the swellings upon coughing. The child appeared to rally somewhat from the shock after stimulation, but after the first night he gradually sank and died on the 21st (three days after the emphysema commenced), the dyspnœa increasing considerably towards the end. The temperature remained normal throughout after the first shock, at which time it fell to 97°. At the necropsy, held on the following morning, the body was found to be almost destitute of subcutaneous fat, though the skin was separated two inches or more in places by the extravasated air from the deeper structures. On opening the chest no fluid was found in the pleural cavities; both lungs were slightly adherent to the parietes, more so behind than in front, but neither lung was much collapsed. The mediastinal glands were enlarged, caseous, and breaking down. Both apices were almost solid with tuberculous masses, and miliary tubercles were scattered throughout both lungs. The left upper lobe was found to be partly adherent to one large gland, which was in turn fixed to the parietes; this gland was broken down in the centre, and a probe could be passed through it into the cellular tissue. No cavity in the lung could be discovered, though the communication was doubtless established by the ulceration and breaking down of the cells at the situation of this gland.

Birmingham.

DISLOCATION OF THE HIP IN A CHILD THREE YEARS OF AGE.

BY SURGEON-MAJOR D. CHARLES DAVIDSON, I.M.S.,
CIVIL SURGEON, SATARA, INDIA.

A HINDOO CHILD about three years of age was brought to the Civil Hospital, Satara, on March 31st last with a deformity of the hip. The history was obscure. It was stated that the child whilst playing fell down on a stone and sustained the injury for which he was brought to the hospital, but nothing very clear or definite could be elicited. This was said to have occurred more than a fortnight previously to admission. On a careful examination he was found to be suffering from dislocation of the right hip-joint of the ilio-sciatic type. The child was placed under chloroform and the dislocation was reduced by manipulation with some little difficulty.

Remarks.—The chief feature of interest in this case is the great rarity of dislocation of the hip-joint in young children.

TERTIAN AGUE OCCURRING DURING AN ATTACK OF ENTERIC FEVER.

BY T. SYDNEY SHORT, M.D. LOND.

IT is always interesting to note occasions when two maladies attack the human frame at the same time and to watch the result that accrues. The following case illustrates an attack of tertian ague occurring during the course of enteric fever.

The patient, a healthy young man aged twenty-nine, had formerly been in the army in India and had suffered on two occasions from ague when there. Since his return to England four years ago he had been quite free from it. During the third week of what appeared to be in all respects a typical attack of enteric fever he had a rigor, with the temperature rising to 104°, followed by profuse sweating and a rapid fall of the temperature to 95·2°, as taken in the rectum. This naturally gave rise to alarm, but he himself said with a calmness that was reassuring, "It's only an attack of the ague; I had it four years ago in India." The temperature rose again the next day without any rigor, but the day after he had another rigor, the temperature reaching nearly 105°, followed by a fall to 95·6°. Quinine had been exhibited and

from this time the fever ran an ordinary course, and he made a good recovery. It is interesting to note that in spite of the high temperature his pulse was never higher than 104.

The temperature from Oct. 29th to Nov. 4th had gradually fallen to 100° F., when it suddenly rose to 104°, falling on Nov. 5th to 95·2°, and rising again to 103·6°. On the 6th it is noted as having fallen to 98° and as rising again to its highest point, 104 6°, whence on the 7th it fell to 95 6° and then rose to the normal enteric fever level of 102°, whence defervescence gradually established itself, and the temperature then fell to the usual post-febrile subnormal range between 97° and 98°.

Newhall-street, Birmingham.

ETHER IN PERCUTANEOUS THERAPEUTICS.

BY SIR JAMES SAWYER, M.D.LOND., F.R.C.P., F.R.S.EDIN.,
CONSULTING PHYSICIAN TO THE QUEEN'S HOSPITAL, BIRMINGHAM.

I HAVE asked Messrs. Southall to seek for further useful applications of the employment of ether as a menstruum in medication by the skin, in the preparation of recognised remedies, beyond those to which I have already invited professional attention.[1] After careful examination of the subject and many experiments they have proposed to me the following modifications of officinal formulæ—namely: 1. Linimentum camphoræ æthereum (same strength as B.P. liniment): camphor., 1; ol. olivæ, ½; æther., 3½ (1 in five). 2. Linimentum crotonis æther. (same strength as B.P. liniment): Ol. croton., 1; ol. cajuput., 3½; æther., 3½. 3. Linimentum sinapis co. æther. (same strength as B.P. liniment): Ol. sinapis, 3; ext. mezerei æther., 2; camphor., 6; ol. ricini, 15; æther., 96 (1 in 40). An ethereal pigment of stavesacre may be prepared from stavesacre seeds, of the same strength as the officinal ointment. It might also be useful to substitute an ethereal pigment of veratrine for the ointment of veratrine in the Pharmacopœia. I have lately used these new ethereal preparations in practice and I have been especially pleased by the efficiency, cleanliness and ready applicability of the ethereal liniment of croton oil.

Temple-row, Birmingham.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. IV. Proœmium.

ST. THOMAS'S HOSPITAL.

TORSION OF COLON IN THE SAC OF AN UMBILICAL HERNIA; GANGRENE OF THE GUT; RESECTION OF THE GREATER PART OF THE TRANSVERSE COLON; ESTABLISHMENT OF AN ARTIFICIAL ANUS; RECOVERY.

(Under the care of Mr. G. H. MAKINS.)

THIS case is an example of obstruction of the bowels in which the obstruction, although situated in a hernial sac, was not caused in the usual manner by constriction of or near the neck of the sac, but by a volvulus or twisting of the contents. There are two ways in which a volvulus of the bowel takes place: (1) Twisting round a mesenteric axis; (2) the intertwining of two coils of intestine so that obstruction is caused by it; of these the former is the more common. We cannot enter here into a discussion as to the advisability or otherwise of excision as opposed to the formation of an artificial anus in gangrene of intestine due to strangulation. Each case should be considered on its merits and treatment adopted accordingly.

The patient, a married woman aged seventy-nine, the mother of eight children, was admitted to St. Thomas's Hospital on Nov. 27th, 1892. She has had a reducible umbilical hernia for many years, but always enjoyed excellent general health. While walking upstairs to bed at 9 P.M. she was seized with sudden pain in the abdomen and commenced to vomit copiously. Four hours and a half later she was brought to the hospital and the following condition was noted on admission. She was partly unconscious, in very severe pain and vomited frequently; the tongue was moist but furred; the bowels acted the day before admission; the temperature was normal, the pulse small and rapid; the hernia was of considerable size; the umbilicus was situated at the lower part of the tumour, it was tense, dull on percussion and very tender. At 4 A.M., seven hours after the commencement of the symptoms, the patient was placed under the influence of mixed ether and chloroform anæsthesia. An incision four inches in length was carried through the wall of the hernia, the colon at once came into view and a very fetid odour was noticeable. The gut was devoid of polish, dark purple (in parts greenish) in colour, and evidently gangrenous. On examining the ring it was found that the finger could be passed into the abdominal cavity and that the gut was in no way compressed at the neck. The colon, however, was very fully distended with fæces and the loop had undergone a half turn on it mesentery, giving rise to complete obstruction of its lumen at a point corresponding to the neck of the hernial sac. As the appearance of the intestine offered no prospect of recovery the sac was well flushed, the gut was drawn out, the neck packed, clamps applied to the healthy gut on the proximal and distal side, and the affected loop cut off. Ligatures were applied to the mesenteric vessels, and the two ends of the intestine were sutured side by side near the mesenteric margin. A portion of the redundant sac was excised, and the gut was then stitched with a continuous suture to the abdominal wall, so as to form an artificial anus. The portion of colon removed consisted of the transverse colon, which, as the result of distension, was U shaped. The walls were gangrenous, and the lumen was fully distended with solid fæces, of which this portion of the gut had evidently been the habitual reservoir. The after-course of the case was satisfactory in the extreme. The temperature never rose to 100° except on the first night, afterwards running an uninterruptedly normal course. Locally, slight suppuration occurred in the remains of the old sac, but four weeks later the patient was able to wear an indiarubber colotomy plug with comfort, and she left the hospital in good health on Jan. 2nd, 1893.

Remarks by Mr. MAKINS.—The above case is of interest both from its rarity and from the fact that the advanced age of the patient did not interfere with a satisfactory result. The most striking point in the history was the rapidity with which gangrene of the affected intestine took place, and this evidence of low vitality was an important point in deciding the best line of treatment to adopt. The occurrence of torsion seems readily explicable when the conditions are reviewed. The colon formed a well-marked loop attached to an elongated mesentery, the loop was heavily distended with fæces and escaped through a large opening in the abdominal wall free enough to allow the twist to take place with ease. The weight of the contained fæces taken with the elongation of the mesentery would offer unusually favourable conditions for the accident. As to the treatment adopted, the age of the patient, the rapid occurrence of gangrene in the affected intestine, and the necessity for rapid completion of the operation, seemed to contraindicate any attempt to immediately unite the ends of the divided colon, and the same reasons rendered the patient an unsuitable subject for further surgical interference at a later date, although she left the hospital bright and cheerful and in good condition.

ROYAL INFIRMARY, NEWCASTLE-ON-TYNE.

FOUR CONSECUTIVE CASES OF NEPHRECTOMY.

(Under the care of Mr. PAGE.)

IN these four cases of removal of the kidney for disease the operation selected was that by the lumbar method, the one which is generally performed where hydronephrosis or pyonephrosis requires it. The difficulty met with in removing the kidney varied in the different cases; in one the organ was much adherent and was separated with much trouble and not without wound of the peritoneum. The complication of

[1] THE LANCET, May 17th and July 12th, 1890.

wound of the peritoneum was recognised as serious, not only because the immediate risk of peritonitis was increased, but also because the later risk of inflammation from the septic fluid which had entered it from the wound was considerable, Mr. Page boldly met this by washing out the peritoneal cavity and the patients did well. In the cases of hydronephrosis the distension of kidney apparently depended on different conditions. In the first, although the symptoms resembled those due to the presence of a stone, there was no history or evidence in hospital of hæmaturia, and it is probable that some twist or kinking of the ureter was the cause; in the second the history and age of the patient made it much more probable that calculus was the cause, although none was found, for there was a history of severe hæmaturia added to the other symptoms. The cases of pyonephrosis resembled one another chiefly in their name. The one was met with as a chronic condition in a woman almost exhausted by discharge and too ill for immediate extirpation until relief had been afforded by incision; the other as an acute condition, supervening on a somewhat chronic disease in a man, where a rather difficult and prolonged operation for excision was done soon after admission and with success. The cases are interesting additions to the surgery of the kidney For the notes of these cases we are indebted to Mr. W. H. Bishop, house surgeon.

CASE 1.—A lad aged sixteen was admitted to the infirmary under the care of Mr. Page with the following history. About five years ago, never having previously had any urinary trouble, he was suddenly seized with pain in the left side just below the last rib. He vomited and was unwell for a few days. From time to time he has had similar attacks, sometimes coming on during sleep and always accompanied by vomiting. Latterly it had been noticed that a tumour of considerable size had appeared just below the last rib with each attack and subsided in a few days. The attacks became more frequent and the tumour larger than when first noticed. Shortly before admission he had another attack, when the swelling was as large as a cocoanut. It was dull on percussion, smooth and regular, and there was a distinct feeling of fluctuation. The urine, as far as the patient was aware, had always been normal and had never contained any blood. The swelling was punctured with a hollow needle and urine was withdrawn, thus confirming the diagnosis of hydro-nephrosis. During the week or ten days he was resting he had two or three attacks of pain and sickness, and the quantity of urine passed and the size of the tumour varied very little. The day before the operation, however, he passed sixty-five ounces of urine and the swelling disappeared. On Oct. 8th, 1892, the kidney was exposed by a transverse incision, the pelvis was cut into and a search was made for a calculus, but none was found. The spot where the ureter joined the much-dilated pelvis could not be identified till the latter had been freely opened. When found it was seen to be a well-defined mouth, admitting a good-sized probe. The ureter was pervious down to the bladder and no calculus or obstruction could be found in it. The original wound was now enlarged towards the crest of the ilium and the kidney was readily removed. The upper portion of the ureter was sewn to the skin. The patient never had a bad symptom, and is now in perfect health.

CASE 2.—A woman aged thirty-two was admitted to the infirmarry under the care of Dr. Limont, having suffered from pyonephrosis of the right kidney for about two years, and was transferred for operation to Mr. Page's ward. She was in such a debilitated condition that it was feared she would not stand so serious an operation as nephrectomy. The kidney was therefore cut into, a quantity of offensive pus let out and the cavity drained. She was greatly relieved and after a few weeks left the hospital in a much improved condition. On Oct. 8th, 1892, she was readmitted with a sinus through which urine and pus constantly flowed, to her great discomfort. On Oct. 15th the kidney was removed by a similar incision to that employed in Case 1, but not so satisfactorily. The capsule was closely adherent to the kidney and to the surrounding structures, so that the peritoneum was wounded. The wound made in it was too extensive to tie, and was therefore closed with sutures. Again a probe was passed down to the bladder inside the ureter and no obstruction could be felt. The kidney was much dilated and contained a large quantity of offensive pus. A drainage-tube was secured in the ureter by a stitch and the wound was closed. As it was almost certain that some fluid from the wound must have found its way into the abdomen it was opened by a small incision just above the pubes. Some ounces of bloody fluid escaped. The cavity was washed out, a drainage-tube was introduced into Douglas's pouch, and the wound was closed. The patient rallied well, passed fourteen ounces and a half of urine during the first twenty-four hours, and both wounds healed without trouble and she is now quite well.

CASE 3.—A puddler thirty-eight years of age was admitted to the infirmary under the care of Mr. Page on Nov. 1st, 1892. He complained of intense pain in the right iliac region, passing through to the back, and of incontinence of urine of twelve months' duration. He was under treatment for three months in a neighbouring hospital and was relieved; but eight months ago, whilst under canvas with the Militia, he got wet, and all his old symptoms returned. On admission he had constant pain and tenderness in the right lumbar and iliac regions. Lying on his back he could retain his urine for about an hour. His morning temperature averaged 98° F., evening 101°. The urine was acid and two-thirds pus. No tumour could be felt. Fourteen years ago the patient had gonorrhœa. On Nov. 10th he had a severe rigor and the temperature reached 106·8°. On the next day he had another rigor and the temperature rose to 105·4° F. Each rigor was followed by profuse sweating. On Nov. 15th an oblique incision was made to expose the right kidney. It was found lying higher than usual, and on being incised a very large quantity of offensive pus escaped. It was now determined to remove the kidney. This was no easy matter, as it was firmly adherent to the diaphragm and was covered by the liver. However, by enlarging the wound and pushing the liver aside, the kidney was isolated and the vessels were secured, partly with ligatures and partly with long pressure forceps, which were left in the wound. The peritoneum was not injured. The wound was then tightly packed with antiseptic gauze and closed with silkworm gut sutures. The ureter was not secured to the skin, but was included in the first interlocked ligature. It was known to be patent from the large quantity of pus passing into the bladder from the kidney. On Nov. 17th the forceps and gauze were removed. The patient made a good recovery and left the hospital cured and passing plenty of perfectly normal urine.

CASE 4.—A joiner aged twenty-seven was admitted to the infirmary under the care of Mr. Page complaining of periodical attacks of pain in the left side, accompanied by vomiting, of three years' duration. The history was as follows. About two and a half years ago (October, 1890), whilst the patient was engaged at his work, he was seized with an aching pain in the left side, which travelled round to his back and down to the lower part of his abdomen. He was compelled to leave his work, and by the time he had walked home (about a quarter of a mile) the pain was very acute, especially over the lower part of the abdomen. He was compelled to go to bed and obtained medical advice. Three hours later he became very sick and vomited freely, and shivered for about a quarter of an hour. He experienced difficulty and pain on passing urine, and it was loaded with blood and was very scanty. He had no appetite, and if he ate anything he vomited it within half an hour. The pain and vomiting lasted three days, when he gradually became better, though feeling very weak. The urine at the same time increased in quantity and the blood disappeared. In four days he felt quite well and remained so for three weeks, when he was again attacked in a similar manner, pain and vomiting lasting three days as before and the urine again containing large quantities of blood. He had had attacks with precisely the same train of symptoms at varying intervals of from three to six weeks up to the time of his admission, the last one occurring a week before. No tumour or abnormality could be felt anywhere in the abdomen or loins, but there was a tender spot in the left lumbar region just externally to the erector spinæ muscle. On Feb. 4th, 1893, the kidney was exposed by a similar incision to that employed in the previous cases. It was found to be much dilated. On incising the pelvis a large quantity of urine escaped. No stone was found. An attempt to pass a probe down the ureter was unsuccessful, owing apparently to a twist of that tube. The kidney was then removed, the pedicle being tied in two sections and the vessels secured by additional ligatures. Unfortunately the peritoneum was wounded during the dissection for exposing the kidney, and as the ligature placed round the wound became dislodged during the operation the abdomen was opened by the usual median incision and was washed out with normal saline solution. The wounds were closed in the usual way, drainage-tubes being inserted and the ureter sewn to the skin. The tubes were removed on the next day. The patient was severely collapsed at the close of the operation, but he quickly rallied and left the hospital quite well, the wounds having healed by primary union except where the ureter was sutured to the skin.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Removal of "Pressure Pouch" of Œsophagus.—Influence of Diet in Chronic Bright's Disease.

AN ordinary meeting of this Society was held on April 25th, Dr. CHURCH, Vice-President, in the chair.

Mr. BUTLIN read a paper on the Removal of a "Pressure Diverticulum or Pouch" of the Œsophagus which was typical in its situation and in the symptoms which it occasioned. It was removed through a long incision on the anterior border of the left sterno-mastoid muscle. The omo-hyoid muscle and the superior thyroid artery were divided; the carotid sheath and its contents were drawn aside. The pouch was easily found and separated from the surrounding tissues. As the pouch was cut away the opening into the gullet was closed with fine silk sutures. The patient made a rapid and excellent recovery. He believed that this was the first operation of the kind which had been performed in this country. The only similar case with which he was acquainted was that described by Professor von Bergmann in Langenbeck's "Archiv," Band xliii, Heft 1, 1892. The question of the origin of pressure pouches was shortly discussed and the great difference in the characters of some of the pouches was pointed out. The operation was not difficult; indeed, it was much easier than had been expected. Justification for the operation was found in the intractability of the condition to every other kind of treatment, in the misery which was occasioned by the pouch, and in the fact that, in more than half the recorded cases, death had resulted from the disease, generally by slow starvation.—Mr. CLEMENT LUCAS inquired if any alteration in the tone or pitch of the voice resulted from the operation. In reading some of Mr. Cock's papers he had come across two cases of pharyngotomy, and in both there had been an alteration in the tone and pitch of the voice, due, as Mr. Cock thought, to interference with the recurrent laryngeal nerve. Mr. Lucas himself considered that it was probably due to division of the external laryngeal branch of the superior laryngeal nerve where it ran beside the superior thyroid artery, producing paralysis of the crico-thyroid muscle on that side.—Sir RICHARD QUAIN referred to a case of pressure pouch which he had exhibited years ago to the Pathological Society on behalf of Mr. Izod of Bromley and of which a drawing was to be found in one of the earlier volumes of the Transactions.—Mr. GODLEE mentioned a case he had recently seen of a young soldier who thought he had been poisoned in Burmah. After a meal he became very violently sick, and some weeks afterwards there was difficulty in swallowing. He appeared to have developed a pouch at the lower end of the œsophagus, which he could empty when lying down at night and in certain positions of the body. The case had been treated by passing full-sized bougies past the pouch into the stomach, and this had resulted in cure He thought that the constriction existing at the lower end of the œsophagus had been increased by the action of a corrosive poison.—Mr. BARKER asked if these pouches were met with on every aspect of the œsophagus.—Mr. BUTLIN, in reply, said that the voice had not in the least altered since the operation. He regarded the case Mr. Godlee had related as one rather of dilatation of the œsophagus above a stricture than as a true pressure pouch, which latter always occurred at the junction of the pharynx and œsophagus and in every instance (save one in St. Thomas's Hospital Museum) sprang from the posterior aspect of the tube. He had recently learnt that Kocher of Berne had lately operated twice on cases of this nature, in both with a successful result. All the specimens he had seen could have been fairly dealt with by operation. Though the diagnosis was easy from the symptoms, some of these cases had been mistaken for stricture.

Dr. HALE WHITE then read a communication on the Influence of Various Diets upon the Composition of the Urine and the General Condition of Patients suffering from Chronic Bright's Disease. He first referred to the opinions of many authors and pointed out that they were by no means unanimous as to the best diet for patients with chronic Bright's disease. He next showed that all the *a priori* reasons which had been urged in favour of milk or any other particular diet were fallacious and that consequently the only way to attack the problem was to carefully observe the condition of the urine and the condition of the patient upon different diets. It was very necessary not to draw deductions from too few cases; he had therefore taken ten cases of chronic Bright's disease in which the urine had been carefully analysed every day for many weeks, so that altogether between four and five hundred analyses of it were made. In each case notes were kept also of the general condition of the patient. The following diets were tried: Milk, three pints a day, containing 1076 grains of proteid; farinaceous, consisting of bread and milk, containing 1137 grains of proteid; full diet, consisting of bread, butter, milk, meat, rice pudding and containing 1522 grains of proteid; and sometimes the effect of adding fish, eggs or more meat was tried. The following results were reached: 1. Quantity of urine. Usually more urine was secreted upon farinaceous or milk diets than upon full diet. 2. Specific gravity. The diet had no certain influence on this, but on the whole it was lower on milk and farinaceous diets than on full diet. 3. The quantity of albumen passed. The figures showed that nearly always the albumen passed was more upon milk diet than upon farinaceous and less upon full diet than upon either milk or farinaceous diet. Even in the rare instances in which the maximum quantity was passed upon full diet the excess of proteid in the full diet more than compensated for any extra loss of albumen, so that patients always best avoided loss of albumen by a full diet. 4. The quantity of urea passed. The influence of diet upon this was most uncertain; often less urea was passed upon full diet than upon farinaceous and less upon farinaceous than upon milk. Sometimes the reverse was true. 5. General condition of the patient. The cases distinctly showed that full diet was not more liable to lead to uræmia than any other; in fact, in one patient full diet appeared to ward off uræmia and the patient ultimately recovered. The patients always felt and seemed much better and stronger on full diet, or on farinaceous diet with meat or eggs added, than on milk or farinaceous diet only. Many patients loathed milk diet and greatly disliked farinaceous diet; on the other hand, they relished full diet. Dr. Hale White therefore advised full diet, for it did not lead to uræmia nor was it harmful in any way, but it saved albumen, and the patients liked it and improved on it in all respects, whilst they greatly disliked other diets. If the diuretic effect of milk was desired, plenty of water should be drunk.—Sir RICHARD QUAIN was much pleased to hear a voice raised against the indiscriminate use of milk in cases of chronic Bright's disease. He proceeded to relate a case to show how all-important was the question of diet in instances of albuminous urine. An emaciated boy aged seven was brought to him, and on physical examination he could detect nothing, though the urine was loaded with sugar and albumen. The patient had been troubled with confined bowels, for which "plenty of sugar and brown bread" had been prescribed. The boy had lived on this food for some time, and a careful regulation of his diet brought about a speedy convalescence. He was consulted by the same patient when aged sixteen, when he found the abdomen enormously swollen and the urine solid with albumen, because he had been living almost exclusively on pastry. Shortly afterwards he fell and fractured his skull, and under the simple diet then enforced the albumen entirely disappeared and he was at the present time in the enjoyment of good health. He regarded mercury as one of the most valuable remedies in certain cases of albuminous urine. He mentioned the instance of a man who accidentally contracted a syphilitic induration and who took enormous doses of mercury without doing his albuminuria any harm. In another case of albuminuria caused by catching cold whilst bathing during menstruation one grain of calomel in the form of Plummer's pill was taken every night for a year with an excellent result, though the patient died ten years afterwards from double pneumonia.—Dr. MAGUIRE said that the amount of albumen passed was only of importance in a relative manner as indicating other lesions present; a large amount of albuminuria might be present and be consistent with the preservation of health. He asked Dr. Hale White to supplement his paper by adding in what way the patients who were improved felt better, especially noting the condition of the circulation. He held that the diet should be modified in the different stages of granular kidney and he thought that full diet was a great mistake for a patient in the early stage when there was a full pulse and labouring heart, but later, when the heart was giving out, a full diet used with judgment might be of benefit.—Dr. BROADBENT said that he had never attached

importance to the amount of albumen except as indicative of other conditions. The general treatment should be guided by observation of the pulse tension and of the condition of the heart. He believed that uræmic symptoms were simply a question of balance of circulation. When the peripheral resistance overmastered the cardiac contraction, and stasis occurred in the cerebral capillaries, then uræmic symptoms showed themselves. The remedy for threatening uræmia was not starvation on a milk diet but to diminish peripheral resistance and increase cardiac action, and a liberal diet was of the greatest importance. His experience bore out the value of mercury, which increased intestinal and hepatic elimination, and its effect on arterial tension was more marked than that of more violent purges.—Dr. BERNARD O'CONNOR thought that a milk diet lessened the frequency of micturition. In the albuminuria of advanced phthisis raw white of egg given by mouth diminished the albuminuria. The albuminuria after scarlet fever was lessened by a milk diet, and albuminuria following scarlet fever had never been observed in those who had never eaten meat.—Dr. HALE WHITE, in reply, said that he was glad that there was a general agreement that the importance of milk diet in these cases had been over-estimated. In his paper he had embodied full details as to the condition of the respiratory and circulatory systems and as to the general strength of the patients after the various diets.

MEDICAL SOCIETY OF LONDON.

Nasal Polypus.—Stump after Amputation at Hip-joint.—Arterio-venous Aneurysm.—Chancre on Cheek.—Rodent Ulcer.—Diagnostic Significance of Hæmoptysis in Aortic Aneurysm.

A CLINICAL meeting of this Society was held on April 24th, the President, Dr. BRISTOWE, in the chair.

Mr. SPENCER WATSON brought forward a case of Polypus Nasi of unusual form and size. The patient from whom the specimen was removed was a man of fifty years of age, of nervous habit and manner, and who was chiefly occupied in attending to his garden. The obstruction to the nose had existed for about two years. Mucous polypi occupied the right nasal fossa, extending backward into the nasopharynx and blocking the posterior aperture of the left fossa, in which, however, there were no polypi. The growth exhibited long finger-like processes and was of large size. Mr. Watson exhibited the specimen and drawings, and suggested that the peculiar form was due to over-development of papillomatous growths, such as were seen in chronic hypertrophic rhinitis. The instruments used were also exhibited, and the one which was most successful in removing the principal growth was the ring-knife. The various forms of cold wire snare were not so successful, for reasons indicated.

Mr. PERCY SYMONDS (Oxford) showed a boy eight years of age on whom Amputation at the Hip-joint had been performed after failure of excision for tuberculous disease. There was found to be considerable necrosis both of the great trochanter and of the acetabulum and the patient's condition at operation necessitated transfusion. He could now walk with ease and without further support than that derived from an artificial peg-leg. Some amount of bone had reformed in the stump.—Mr. LOCKWOOD referred to a somewhat similar case shown by Mr. Shuter to the Clinical Society about nine years ago, in which a subperiosteal amputation at the hip-joint had been done. Some new bone had been formed and an artificial limb had been fitted to the stump. He had since seen two cases similarly treated, but not with such success, for in one the bag of periosteum suppurated, no new bone was formed, and the patient died of lardaceous disease, whilst in the other the newly-formed bone was so irregular that it had afterwards to be dissected out.—Mr. SYMONDS, in reply, said that his was the only case reported in which progression was possible without a crutch or stick. The injection of tuberculin before the operation produced quite an explosion in the diseased joint.

Mr. STONHAM exhibited a woman aged twenty-one who ten years ago received a blow over the metacarpal bone of the thumb. An Arterio-venous Aneurysm had formed between the arteria dorsalis pollicis and the commencement of the radial vein. There was a marked thrill, which disappeared on slight pressure, and also a distinct and peculiar bruit. It had caused pain only during the last four months. He thought he could detect a distinct sac lying beneath the radial vein. For treatment he proposed to apply elastic pressure over the tumour, together with proximal pressure on the radial artery; if this failed he would cut down over the swelling and ligature the artery both proximally and distally.—The PRESIDENT remarked on a case in which there was a communication between an aortic aneurysm and the vena cava. There was a murmur present which resembled that in the case shown, but a thrill could not always be felt. He regarded the thrill as a light tremor of the sac wall, and very slight application of pressure would cause it to disappear. He did not believe that the obliteration of the thrill by light pressure was due to obstruction of the narrow opening between the artery and the vein, because a precisely similar thrill was often present in aneurysms where there was no communication between the two; indeed, he had met with it in the subcutaneous tumours of a multiple sarcoma.—Dr. GILBART SMITH referred to two cases of obstruction to the aorta in which the anastomotic circulation was maintained partly by vessels coursing down the back. Many of these small arteries became quite aneurysmal and exhibited a thrill and bruit like those in the case shown.—Mr. STONHAM, in reply, said he recognised the fact that the bruit might be present in other conditions, notably in large varicose veins. He based his diagnosis rather on the presence of distinct expansile pulsation, which was readily appreciated on moderate pressure.

Mr. JONATHAN HUTCHINSON, junior, showed a man aged thirty-five who had received a bite on the cheek in the course of a quarrel. A small Chancre developed which was but slightly elevated and secreted but little; there was a large submaxillary bubo and an early roseolous rash over the body. The person who inflicted the bite had been attending as an out-patient with secondary syphilis. The patient had proved resistant to mercurials administered by the mouth, but was doing fairly well under inunction.

Mr. HUTCHINSON, junior, also showed a man aged sixty-eight who had been the subject of Rodent Ulcer affecting the inner half of the right lower eyelid. This was dissected out and the raw area covered with a flap of skin turned down from the forehead, which had firmly united, and the patient had no epiphora.

Dr. GILBART SMITH then read a paper on the Diagnostic Significance of Hæmoptysis in Aortic Aneurysm. In some cases this was the first symptom and might be either direct, from bursting of the sac, or indirect, oozing from mucous membranes owing to pressure. After remarking that the direct hæmorrhage was not necessarily immediately fatal, he said that the second form was the one to which he wished to direct attention. The hæmorrhage might result from pressure on the air passages, the bloodvessels, the lung substance or by interference with the lung circulation owing to a secondarily developed cardiac valvular lesion caused by the aneurysm. He then gave brief details of a series of cases to illustrate these various forms of pressure and concluded by sketching the outline of a typical case. Given a patient with a specific history, and especially if he had the physique and appearance suggestive of this: given symptoms of uneasiness, if not of distinct pain, in the chest, of a spasmodic character, with few signs of a cardiac nature other than perhaps those of high arterial tension, and presenting no symptoms pointing to pulmonary disease beyond a paroxysmal cough with but little expectoration and that tinged with blood; and when, further, in such a case one could, after careful examination, eliminate ordinary disease of the lungs, kidney and heart: he was of opinion that in such a case there was just reason for suspecting the existence of aneurysm and for anticipating at no distant date the development of more pronounced symptoms.—The PRESIDENT agreed generally with the views expressed in the paper and could quote many cases to confirm the truth of them; but he thought that mediastinal tumours, in their early stage, were attended with all the symptoms that might characterise aneurysm, except a rush of blood after rupture. He referred to instances showing that rupture of an aneurysm was not necessarily immediately fatal.

OTHER METROPOLITAN MEDICAL SOCIETIES.

HUNTERIAN SOCIETY.—An ordinary meeting of this Society was held at the London Institution on April 12th, Mr. F. GORDON BROWN, President, being in the chair.—Mr. OPENSHAW showed a case of Resection of the Median Nerve

at the bend of the elbow three months after its division by injury, where, owing to arrest in the reappearance of sensation, he had again exposed the nerve and found it involved in the cicatrix, division of which was followed by a further diminution of the anæsthetic area. He also showed a man upon whom Gastrostomy had been performed ten weeks previously for impassable œsophageal stricture and who was now feeding himself and following his usual employment.—Mr. WOODS showed a female patient aged thirty-two suffering from typical Myxœdema of fifteen months' duration, which began to improve on the third day from the exhibition of thyroid extract.—Dr. HINGSTON FOX exhibited a case of recent Myxœdema cured by treatment with crude sheep's thyroid gland. The patient ate one gland weekly, half at a time, at two days' interval. She began to improve within a month. She had been ill for four months and had lost 19 lb. in weight. The hands, feet and legs had desquamated.—Dr. F. J. SMITH exhibited a woman suffering from Myxœdema aged fifty-seven, with symptoms of three years' duration. The first symptom was deafness, then thickness of speech, next swelling of the feet with pains and fatigue in the legs. Her skin was naturally dry. She had much improved by eating cooked sheep's thyroid glands. During treatment she accidentally ate ten thyroid glands. This meal was followed by nausea, a very rapid pulse and acute dermatitis of the hands with subsequent peeling of the entire skin of the hands.—Dr. DAVIES showed a case of Ball's Paralysis; also a case of Hemi-facial Diaphoresis.—Dr. BRAMWELL said he had treated two similar cases successfully by hypnotic suggestion.—Dr. HINGSTON FOX showed a girl with Lymphadenoma of the Cervical, Axillary and Inguinal Glands of six months' duration. The liver and spleen were enlarged; the blood corpuscles were normal in quantity. Arsenic had been ineffectually exhibited.—Mr. WOODS exhibited a man aged forty-seven, who for two years had been an inmate of Hoxton House Asylum suffering from Chronic Mania and Alcoholism. He had been hypnotised five times and suggestion had been applied, with up to the present a perfect effect. Mr. Woods also showed a female patient aged twenty-nine, who for the past two years has been a confirmed alcoholic, but who had been cured by hypnotic suggestion. These two patients were hypnotised by Mr. Woods later in the evening. Another patient was exhibited who suffered for four years from intractable facial neuralgia which drugs had failed to relieve. Hypnotic suggestion had completely cured her.—Dr. TUCKEY said the second case had been under his care, but had twice relapsed after hypnotism had apparently cured her.—Dr. BRAMWELL mentioned cases under his care—a drunkard for seventeen years, a drunkard for ten years, a drunkard and drug drinker and ataxic patient, and a neuralgic patient—all cured by suggestion under hypnotism. He made it a rule always to suggest three things to his patients: (1) That they should never allow anyone else to hypnotise them; (2) that he himself should not be able to hypnotise them a second time unless they wished it; (3) that when hypnotised no suggestion should be acted on except those which the patients would approve of if sober.—Dr. GLOVER LYON was unconvinced by anything he had seen. He thought hypnotism ought to be let severely alone.—Dr. HINGSTON FOX had no personal experience of hypnotism.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—At a meeting held at the Miller Hospital on Friday evening, April 7th, Dr. PITT, President, in the chair, a discussion on Paracentesis was opened by Mr. JOHN POLAND. He described the various methods of operating—viz., by aspiration, rapid evacuation by trocars of various size, subaqueous syphonage, drainage by Southey's tubes and by permanent syphon drainage. In the treatment for empyema he condemned resection of the rib, and considered pleurotomy of more therapeutic value than paracentesis in children. Under strict antiseptic precautions he considered paracentesis abdominis for ascites totally devoid of risk and urged its early performance.—Dr. LAURISTON SHAW discussed the subject under the two headings of (1) paracentesis *versus* free incision and (2) paracentesis *versus* natural absorption. He considered that as there was no clear line of demarcation between serous and purulent inflammatory effusions, the cases in which paracentesis is to be preferred to free incision cannot be defined with any degree of strictness. He said that when the pressure exerted by the fluid has a salutary effect in retarding the excretion and ultimately entirely arresting it, as in hydronephrosis, paracentesis is to be preferred to free incision. He strongly condemned the removal by any method of fluid from moribund patients.—Dr. HORROCKS said the value of paracentesis as a diagnostic agent was great. There were many cases of abdominal tumours where the diagnosis between uterine fibroid and ovarian cyst was only possible by resorting to paracentesis.—Dr. ERNEST CLARKE referred to the value of paracentesis in the treatment of hypopion. In many patients the pus disappeared from the anterior chamber after the use of leeches and fomentations, whilst in others no attempt at reabsorption took place and it had to be evacuated. He had noticed that the difference between these two classes was the state of the general health, those whose constitution was broken down or who were saturated with drink belonging to the latter class.—Dr. Moon, Dr. Tayler, Mr. Hartt and the President joined in the discussion which followed.

MIDLAND MEDICAL SOCIETY.

Exhibition of Cases and Specimens.

A MEETING of this Society was held on March 8th, Mr. LLOYD OWEN in the chair.—Mr. WOOD WHITE showed a remarkable case of Congenital Pigmentation of the Sclerotic in a girl aged six years.—Mr. BARLING showed a boy from whom he had removed one renal stone weighing about a drachm, and twenty-five smaller ones, none larger than a pea. The kidney was in an advanced condition of Hydronephrosis, and the small stones which were scattered through the dilated calyces were removed with some difficulty by means of a scoop. A good recovery followed. The patient's history, which extended over nine years, showed a complete absence of renal colic, the diagnosis of stone in the kidney being founded on occasional sharp hæmaturia and other symptoms.—Dr. RUSSELL showed a boy aged nine, in whom the anterior halves of the third and fourth ribs on the right side were congenitally absent, together with the corresponding costal cartilages.—Dr. PURSLOW showed two specimens of left Ovary and Tube, the former from a case of ruptured tubal gestation, the latter from a case of pyosalpinx. In the first case the initial symptom of rupture occurred three weeks before admission to hospital, menstruation having been regular up to that time. On opening the abdomen in the middle line there was found a large quantity of blood in the peritoneal cavity, with evidence of recent peritonitis; the left tube was distended and filled with blood-clot, and its interior shaggy and presenting a rupture on its upper and anterior aspect. The tube and ovary were removed and the peritoneum cleared of the clotted blood; the patient made a good recovery. The second specimen was from a case of pyosalpinx. From the symptoms a ruptured extra-uterine pregnancy was suspected. The abdomen was opened and the left tube found to be dilated and surrounded by recent adhesions; these were separated and the tubes and ovary removed. The patient had a somewhat protracted convalescence.—Mr. CHAVASSE showed a recent specimen from a case of Gastro-Enterostomy. The patient was a woman aged fifty-six, suffering from carcinoma of the pylorus, who died exhausted sixty hours after the operation. Union between the stomach and the jejunum was completely established.—Mr. JORDAN LLOYD showed a rare and interesting specimen of Endosteal Fibroma removed from the lower jaw of a girl eight years old. The tumour was three inches long, two deep and about one and a half thick; it had grown between the plates of the lower maxilla and had developed from the periodontal membrane about an unerupted permanent molar tooth which was adventitiously placed deep in the bone, quite close to the inferior border. The tumour was removed through an external incision and the patient recovered.——At the next meeting on March 22nd Mr. C. J. B. JOHNSON showed a case of Myxœdema treated by sheep's raw thyroid glands in which distinct improvement was discernible on the third day; on the thirteenth day the patient had lost one-seventh of her total weight and seven weeks from the commencement of treatment she was able to do her household work. The urine throughout the treatment was markedly increased in quantity and in specific gravity. Nitro-glycerine promptly relieved the headaches which came on when the thyroid gland was given freely. On the disappearance of the myxœdema, however, certain discomforts from which she formerly suffered recurred.—Mr. JORDAN LLOYD showed a specimen of Sarcoma of the Head of the Tibia removed from a man forty years of age by amputation through the thigh. The growth had probably originated in an exostosis which had been present on the inner side of the tibial tuberosity since boyhood, but had never given rise to any trouble until some ten

weeks ago; the tumour then became painful and grew rapidly.—Mr. JORDAN LLOYD showed also a Sarcoma springing from the Popliteal Surface in a man sixty-seven years old, simulating in its physical signs a popliteal aneurysm. The malady began with pain ten weeks before the patient came under his care and three weeks later a swelling was observed. This enlargement developed rapidly and his sufferings became extreme. The tumour partially filled the popliteal space and projected over the lower and inner side of the femur. It pulsated and expanded in all directions. It could be emptied by pressure and filled up again with each throb of the heart. There was a short systolic bruit heard over its posterior surface. The man was so cachectic and emaciated that operation was not thought to be justifiable. He died four months after the onset of the first symptom of exhaustion.—Dr. KAUFFMANN showed a specimen of Retention Cyst of Liver removed from the body of a man aged fifty-eight who died of cirrhosis of liver.—Mr. J. W. TAYLOR exhibited a specimen of Hæmatosalpinx from Atresia of Genital Canal. He also read notes of 250 cases of Abdominal Section.

Reviews and Notices of Books.

An Introduction to the Study of Diseases of the Skin. By P. H. PYE-SMITH, M.D., F.R.S. London: J. and A. Churchill. 1893.

THIS work of 367 pages is, as the author tells us, "a reprint with some variations and additions of the chapters dealing with diseases of the skin which he wrote in 1886 to complete the unfinished work on medicine left by Dr. Hilton Fagge." It is the work of a general physician who has paid a great deal of attention to diseases of the skin, and is marked by the independence of thought which characterises the writer. A pupil of Hebra, his views show markedly the influence of that great master, and he is very sceptical for the most part as to the existence of an etiological relationship between visceral and cutaneous disorders. The chapters on Eczema and Acne are good examples of this scepticism, and as a consequence general therapeutics have only a very secondary place in this work. It is curious to observe a physician in Dr. Pye-Smith's position going further in this direction than most dermatologists—in England, at all events—would be prepared to do. He rightly assigns a very important place to distribution, both in respect of pathology and diagnosis, but he claims too much in saying that "it has never received due recognition." A useful and novel feature of the work in this direction is a series of diagrams of the distribution of the more common affections, though we should dispute the correctness of several of them in some particulars. Thus in those illustrating scabies in the adult he depicts the lesions as occurring on the legs below the knee, whilst but few are represented on the front of the thighs. In an adult male the paucity of such lesions below the knee is a very constant feature, although there is usually abundant evidence of the presence of the acarus scabiei on the thighs. In some of his nomenclature the author is rather old-fashioned; he retains the vague term "impetigo" for pustular eczema, he considers that no sharp line can be drawn between it and what he calls "porrigo contagiosa" and would reject the titles "hydroa" or "dermatitis herpetiformis," placing all this group under vesicular erythema.

Dr. Pye-Smith gives several examples of classification arranged on different principles at the commencement of the work and a specimen of what he considers to be a practical one at the end, but does not adopt any of them. The arrangement of the latter is: superficial inflammations; eczema and its allies, including scabies and papular eruptions ("pimply tetters"); psoriasis and its allies ("scaly tetter"); pemphigus ("bladder tetter") and its allies; erythema and its allies; the affections of the hair sacs and cutaneous glands, including ringworm; then come deep inflammations and hypertrophies; syphilis, lupus, leprosy, tumours, pigmental and hæmorrhagic affections, zona and other neuroses. The principles of diagnosis and a short formulary conclude the work. In spite of its title it is not a work we should recommend to a beginner, on account of its curious arrangement and because it represents views which are often peculiar to the author rather than those generally current. This, however, makes it all the more interesting to those who already have a practical acquaintance with the subject, and it will doubtless afford food for thought to dermatologists although they may not always agree with many of the author's statements and conclusions.

Fermentation, Infection and Immunity: A New Theory of these Processes which unifies their Primary Causation and places the Explanation of their Phenomena in Chemistry, Biology and the Dynamics of Molecular Physics. By J. W. MCLAUGHLIN, M.D. Austin, Texas: Eugene von Boeckmann. 1892.

IN this work we have evidence that the processes of fermentation, infection and immunity are exciting as much interest amongst our cousins in America as they are on this side of the Atlantic. The author writes with the special object of showing "that the accepted principles of molecular physics and those of chemistry and biology, if supplemented by legitimate deductions from them, are amply sufficient to account for all the known phenomena of these processes and also to explain their relationship and intimate nature." In this Dr. McLaughlin cannot be accused of want of hopefulness, and many will feel inclined to criticise this predominant feature of his work. As, however, he shows that he has not only carefully studied his subject, but has also devoted a considerable amount of thought to some of the points he takes up, his words are worthy of attention, as they show in what direction the thoughts of an observer who is not actually engaged in the experimental proof of the facts that he adduces are likely to run. After going over the various theories of immunity and giving them fairly and fully, he then puts forward his theory "why the wave motions of a ferment and a fermentable substance must recur in a relative order of time, that those of the first can disrupt and convert those of the second into ferment products, likewise the wave motions of a bacterium and those of ultimate albuminoid molecules must recur in equal periods that the bacterium can convert the albuminoid molecules into poisonous albumens; the products in both cases, it will be remembered, give off wave motions that interfere with those of the respective bacteria and in this way inhibit their action." Outside the body in artificial media this may be simple enough, but within the body, where the question of immunity has to be considered, it must be borne in mind that there is great diversity in the molecular structure of the various closely allied albumens, and Dr. McLaughlin holds that here "a dynamic change in any single group of these bodies may induce change in other groups, and that the products of such changes may in some cases be harmless and in others harmful." He then works out the process of the conversion of susceptible into "immune" albuminoids and speaks of the whole matter of immunity as "being resolved into the question of susceptibility or non-susceptibility of the albuminoid molecules of the animal body to molecular bombardment of a given bacterium." It is somewhat difficult to follow Dr. McLaughlin in his descriptions and especially to see that he offers anything like proof of his physical theory; nevertheless we can recommend this as an interesting philosophical disquisition, which, however theoretical it may be, and however much we may disagree with certain of the author's deductions and inductions, affords some food for thought.

Sultan to Sultan: Adventures among the Masai and other Tribes of East Africa. By M. FRENCH-SHELDON ("BÉBÉ BWANA"). London: Saxon & Co.; Boston, Mass.: Arena Publishing Co.

IN this interesting volume of 435 well-printed and richly illustrated pages Mrs. French-Sheldon, the heroine of East Africa exploration, has placed before the world the record of her adventures and experiences in her recent tour. It is no exaggeration to say that for plucky determination, patient endurance and diplomatic tact this story of feminine heroism will bear favourable comparison with anything of the kind that has hitherto been given to the world in any age of its history. Our sympathies are enlisted at the outset by the sadly earnest dedication to the memory of her husband, so dearly loved and so unhappily removed from her side in the hour of her triumph. The keynote of the sentiments of the authoress is sounded in the "Foreword," in which the authoress tells us that she completed the work "with an aching heart ..... to demonstrate that if a woman could journey a thousand miles and more in East Africa amongst some hostile tribes, unattended by other than Zanzibari mercenaries, without bloodshed, the extreme measures employed by some would-be colonizers are unnecessary, atrocious, and without the pale of humanity." The brave lady-traveller left London amidst cheers, pelting of flowers, and the usual half-hysterical, frantic commotion attending a departure where a friend's life seems at stake. In due time she sailed from Naples to Port Said. Her most interesting fellow-passenger appears to have been a rat, whose enviable privilege it was from time to time to "manifest his presence by passing his rough, coarse hairy paw over my face." With characteristic decisive gentleness the authoress adds: "I would not consent to have a trap set to capture him." The Suez Canal, Aden, Mombasa and Zanzibar all receive their share of interesting attention, the descriptive text being richly illustrated and instructive throughout. At Zanzibar she experienced the first great tangible difficulty of forming a caravan and notes that: "Alas, at Zanzibar I found that my world-renowned reputation of 'madwoman' had preceded me, to my prejudice"; such an excursion as she projected "never had been done, never even suggested, hence it must be impossible, or at least utterly impracticable and certainly outside a woman's province." Even the results of an interview with the Sultan were not very encouraging. His Majesty appeared to think badly of the idea of going amongst the hostile Masai tribes. One of his questions to the interviewing explorer was, "Has your husband many wives?" The Sultana entered and gave her a haughty reception; the denizens of the harem, to the number of 142, filed past; "each and everyone of these royal concubines, at the command of the Sultan, bathed my right foot in rose-water, and in recognition of my superiority and evidence of their humility each gave me one of her jewelled rings." The Sultan's "gifts were most lavish." She was disappointed in the hope of being able to procure female porters or even a native female interpreter. Malignant fever was raging at Zanzibar, and "it was and is the universal practice during an epidemic for everyone to test his or her own temperature several times daily." This habit is justly denounced by the authoress as "one of the most ridiculous and pernicious." When the caravan of 138 men was at length formed the heroic lady started for the interior of East Africa.

The inevitable attacks of illness which soon began to appear demonstrated the characteristic trait of the Zanzibari porters in that "they have no objections to carry a *mazunga* (white man), but they very much object to carrying a fellow *pagazi* (porter)." The philanthropic plans of the heroine, Bébé Bwana, were, however, successful in contending against this prejudice. She had, of course, in her progress to strive with the obstacle of fever, of hostile natives, of the troublesome and vicious ants, and of the grumblings and discontent of the Zanzibari porters themselves. The habits and prejudices of the natives are throughout described in interesting detail and with a sympathetic interest that has seldom been displayed in works dealing with the traits of native African life. The text is peculiarly rich in illustrations, which make its perusal so much the more instructive and interesting. Glaring sun, pelting rain and falling boulders on the mountain side, all interposed their physical difficulties; earthquakes on a small scale reminded the explorer that there existed a latent fund of volcanic force in the neighbourhood. On the way to Taveta it was observed that "many of the men wear armlets which are placed upon the arm in youth before the muscles are developed, and become embedded in the expanded flesh to such an extent that removal is almost like amputation, so painful and difficult is the operation."..... A ray of Elysian brightness is thrown over the narrative by Mrs. French-Sheldon's observation that "throughout the section of East Africa I journeyed, I was in a constant state of wonderment over the happy, merry disposition of the children, full of song and sport, like arboreal spirits. The region can well be called, as in Japan, the *Paradise of Children.*" The interesting narrative of the circumnavigation of Lake Chala occupies pages 260–283. The success of the progress of the brave Anglo-American lady amongst the savages of its vicinity has led her to the impressive reflection that "I am constrained to say either there must have been some peculiar power vested in me of a quality almost superhuman to have enabled me to subdue these so-called hostile Rombos, or else Dr. Peters's methods are simply brutal, atrocious and unnecessary."

Insects and wild beasts furnished, of course, their quota of trouble, as they usually do in the tropics. Thrilling is the description (pp. 416–418) of her fall from an extemporised bridge, over which she was being conveyed in her palanquin by porters, into a roaring torrent twenty feet below. Dysentery brought her to a state of extreme emaciation before she reached the coast again on her homeward journey; but she overcame the difficulties and survived the dangers. The civilised world has recognised her pluck and accepted the value of her defence of the really good traits in the native African character. May the future civilisation of the Dark Continent be largely achieved by spirits animated by the unselfish heroism and appreciative observation displayed by Mrs. French-Sheldon in her East African tour. Medical and surgical directions and hints were supplied by Surgeon-Major Parke, and the late Captain Stairs carefully prepared some rules as regards the defence of camps; these instructions proved invaluable, representing as they did the thoughtful outcome of the experience of officers of famous repute in African exploration.

Diseases of the Eye. By GEORGE A. BERRY, M.B., F.R.C.S., Ophthalmic Surgeon to the Edinburgh Royal Infirmary. Second Edition, Revised and Enlarged. Edinburgh and London: Young J. Pentland. 1893. Pp. 727.

WE are glad to see that a new edition of Mr. Berry's excellent manual has been called for. It has been enlarged to the extent of about fifty pages. The chapters have been rearranged and in many instances considerably augmented. Some of the old chromo-lithographs have been omitted and many new ones have been added. With a little more care in the drawing and in the printing these illustrations might have been made much more serviceable and instructive to the student; for example, Fig. 20, exhibiting the appearance presented by an oblique section made from above downwards, backwards and slightly outwards, in the direction of the tear-duct is an elaborate full-page chromo-lithograph, yet it is obscure in the very parts it is intended to represent and supplies little or no information in regard to the course of the nasal duct and the direction in which a probe should be passed. This, however, is in part supplemented

by Fig. 19. We should have found some difficulty in naming the affection (cicatricial entropion) Fig. 14 is intended to represent, and the same remark applies to Fig. 28 (chancre of conjunctiva). Fig. 30 is not a good representation of episcleritis; on the other hand, several of the drawings of the fundus are fairly satisfactory, as, for example, those of albuminuric retinitis, of retinitis pigmentosa, of embolism of the central artery and of coloboma of the choroid. In regard to the text, it was not to be expected that the author's opinions would undergo material alterations upon such subjects as sympathetic ophthalmia, glaucoma and cataract. He appears to recommend in ordinary cases of senile cataract that the extraction should be always accompanied by an iridectomy, but excellent results can be obtained without that step being taken. Mr. Berry remarks that "in a certain proportion of cases in which a cataractous lens has been removed it becomes necessary sooner or later to perform some operation in order to further increase the transparency of the pupil," and goes on to say that the number of cases where this is necessary will be less in proportion as the cortical lens matter has been successfully removed at the time of the operation. As a matter of fact the operation of needling is almost always required if the patient desires to read ordinary type. Even when the lens has slipped out without leaving more than a trace of cortical substance, the posterior capsule and membrane of the vitreous humour become wrinkled and seriously interfere with accurate vision of either near or distant objects. Here and there we notice some omissions, as, for example, meningocele, which the inexperienced surgeon may readily mistake for a sebaceous cyst. Again, the surgeon, even in country practice, is sometimes asked whether a boy will be passed if after an expensive education he presents himself at Sandhurst, Woolwich or before some other examining board; such a work as this should give the tests required. We have read through several of the chapters of the present edition and are still of the same opinion we expressed in our notice of the first edition—viz., that the work is extremely well written, that it gives the student a fairly complete account of the principal diseases of the eye he is likely to meet with in practice, and that the treatment recommended may be thoroughly relied on as the result of careful observation and of considerable experience.

Oaths and Affirmations in Great Britain and Ireland. By FRANCIS A. STRINGER, of the Central Office, Royal Courts of Justice. London: Stevens and Sons, Chancery-lane.

ALLUSION has been made in THE LANCET to Mr. Stringer's papers in the *Solicitors' Journal* on the subject of the Scotch Form of Oath and to the completeness with which he has cleared the Oaths Act of 1888 from all the cobwebs which ignorance and doubt had woven around it. In what he modestly calls the second edition of his work on "Oaths and Affirmations," but which is really a new book altogether, he deals exhaustively with the Scotch form and with every other form of oath except that administered to the "jury of matrons," where pregnancy is pleaded in bar of execution. We trust that this may be accepted as implying that so antiquated and objectionable a mode of deciding an important medical question will never again be resorted to. The following extract from the Introduction, pages 1 and 2, gives that part of the work most interesting to medical readers: "There may appear at first sight to be no possible connexion between the germ theory of the propagation of disease and the swearing of an affidavit; and yet it is an undoubted fact that, in proportion as that theory takes hold upon the public mind as a scientific truth, the objection to 'kissing the book' becomes more rooted and more generally felt. Apart from the mere question of cleanliness, an increasing antipathy is manifesting itself against kissing the cover, or even the inside, of a book which may have been previously kissed on the same spot by infected lips. Medical journals and members of the medical profession have enlarged on this subject and pointed out the danger of the operation. It behoves Commissioners for Oaths and all court officials charged with the duty of swearing witnesses to bear always in mind that the Legislature has relieved every witness, and indeed every person required to be sworn for whatever purpose, and whether he swears or affirms, from the necessity of kissing or even touching any book whatsoever. The Oaths Act provides that any person to whom an oath is administered may swear with uplifted hand in the form and manner in which an oath is administered in Scotland." The author proceeds to notice the ignorance which appears to prevail amongst officials as to this change in the law, but it is probable that by this time all such officials will have received the Home Secretary's promised circular and that no further difficulty will be experienced by any witness, medical or lay, in being duly sworn with uplifted hand. The only other points important to medical readers are that any member of the profession who, being a Quaker or having other religious objections to take an oath, may affirm as formerly, but he must make this request as he enters the witness-box and state clearly that his objection to taking an oath is because it is contrary to his religious belief; and that those also who have no religious belief may affirm, but this will probably only apply to exceptionally few medical witnesses. Mr. Stringer's work is very complete and interesting. It appears at a time when such a work is much needed and it ought to be in the hands of every coroner and of every one whose duty it is to administer an oath.

LIBRARY TABLE.

Vaccination Eruptions. By THOMAS DOBSON POOLE, M.D., C.M. Edin. Edinburgh: E. & S. Livingstone. 1893.—Dr. Poole has done good service by compiling this account of the various forms of cutaneous affection which are observed in connexion with vaccination. There was a need for such an essay if only to demonstrate the comparative rarity of these complications, the appearance of which more often than not depends on the individual tendency of the vaccinated subject. Roseola, erythema, urticaria, miliaria, pemphigus, purpura and eczema have all been seen to occur in the course of vaccination, whilst the lymph sometimes effects a cure of eczema. The interesting topic of "vaccine généralisée" is discussed at length with especial reference to a carefully recorded case, in which the author thought the evidence was in favour of the virus having been absorbed into the system rather than of auto-inoculation, which has been held to explain other cases of this condition. The course and characters of vaccino-syphilis are given from the writings of Hutchinson, Fournier and others; whilst the transmission of tuberculosis was tested by the author by experiments on guinea-pigs of simultaneous vaccination and tuberculous inoculation. Not one of these animals died of tubercle, and the conclusion, doubtless true, but hardly deducible from the experiments themselves, is that the "transmissibility of tubercle by means of vaccination is beyond the limits of possibility." Brief reference is made to leprosy, with regard to which the proof of transmission by vaccination is held to be imperfect. The subjects of erysipelas and vaccinia gangrenosa are then dealt with, and it is shown that erysipelas *from* vaccination is all but unknown. As one of the lines of inquiry projected by the Vaccination Commission is that of the alleged injurious results of vaccination, Dr. Poole's contribution to the subject is timely.

Cheyne-Stokes Respiration. By GEORGE ALEXANDER GIBSON, M.D., F.R.C.P. Edin., &c. Edinburgh: Oliver and Boyd. 1892.—There are few clinical questions which have

received more attention than the striking phenomena classed, for convenience and in honour of the distinguished clinicians who in modern times first satisfactorily described them, unde the term "Cheyne-Stokes Respiration." Dr. Gibson divider his careful monograph into three portions—Historical, Clinicals and Critical. When we mention the fact that the author refers more or less fully to the views of more than a hundred observers we cannot refuse a word of praise to such untiring industry. The historical portion is Teutonic in its completeness. The clinical section contains an account of cases observed by the author, whilst his criticism in the final portion is discriminating, cautious and sound. In the author's view, "a careful study of the entire phenomena must lead to the adoption of the view that Cheyne-Stokes breathing is but one of a complex group of associated symptoms ..... the essential cause (of which) is without doubt a periodic variation in the functional activity of the automatic centre for respiration." To this cautious statement none can take exception. The whole subject teems with debatable points of the highest interest to the physician, and there are few which give greater scope for his ingenuity in interpretation, as there are few which demand more judicious handling. There is a useful index of authorities, which in a work of this kind is very desirable.

Vaccination and Small-pox in England and other Countries. By EDWARD J. EDWARDES, M.D. Lond. London: J. & A. Churchill. 1892.—This is an admirable contribution to the literature of vaccination, and the facts and figures which are contained in it should carry conviction to all save the most prejudiced. Nor is Dr. Edwardes content with a mere statement of the reasons for a belief in the efficacy of vaccination, but he deals in turn with the objections that have been so plentifully urged of late years against it. We cannot see how anyone who peruses this evidence can resist the conclusion to which the author comes—that, namely, of the importance of compulsory revaccination if small-pox is really to be held in check. We fear, however, that this will never be established in this country, where the notions of individual liberty are extended to the freedom to spread contagious disease; and yet the repeal of the compulsory vaccination law must of necessity be followed by an equally stringent enforcement of isolation, unless small-pox is to be allowed to run riot in the land, with all its dire results of mutilation and death.

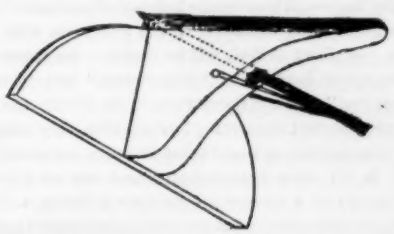
New Inventions.

DRY RUBBING.

MR. F. BENNETT, who is well known as a geologist and antiquary, has invented a very simple contrivance which we think may prove acceptable, especially to travellers. It appears that Mr. Bennett discovered in barrows and in other old-world deposits curiously shaped stones, the purport of which he thinks must have been to rub and cleanse the body in the days when soap and sponges were not dreamt of, and which were used very much, as was the strigil by the Romans and as are the curry-comb and dandy-brush by the modern groom. Mr. Bennett's "massage stone" is made of unglazed white china, is provided with a sort of dorsal lump for holding in the hand, and has the rubbing surface slightly undulating, not to say ridged. The stone is white, and if it be rubbed even upon the recently washed skin it soon becomes black, showing that it squeezes a good deal of material from the pores. There can be no doubt that thorough friction of the skin is not only pleasant but beneficial and stimulates the circulation. We have little doubt that a "massage stone" will prove an acceptable addition to the toilet table and the bath-room. The stone may be warmed before it is used and certainly the friction with a hot stone after a cold bath is admirably calculated to promote reaction. The stone is to be obtained from Mr. S. S. Davies, china merchant, of Newbury.

A PENCIL-HOLDER FOR MAKING OUTLINES OF LIMBS &c.

IT is often desirable in cases of contracted knees, as well as of many other deformities, to obtain an outline or profile that will accurately represent the contour of the part. This is usually attempted by laying the limb on a piece of paper and following its shape by a pencil held in the hand. To do this with any approach to exactness is not easy owing to the difficulty in practice of keeping the pencil in a position at right angles to the paper in all planes. The larger and more rounded the part the further is the point of contact with the limb from the paper, and consequently the more uncertain the result. The accompanying engraving shows a simple



instrument that I venture to think answers all requirements. It consists of a semicircular piece of wood, which forms the base and rests on the paper when in use, having a bracket-shaped piece so fixed to it at right angles that its blunt, angular edge is always vertical. This latter piece projects half an inch beyond the semicircular part of the base and is perforated to allow the passage of a lead pencil, and so arranged that the point of the lead projects immediately beneath the lower end of the upright edge, the wood of which is cut away to the extent of an inch from the bottom and replaced by a thin brass plate appropriately bent. The pencil is pressed downwards by an elastic band, which is passed over its butt-end and fastened to two brass nails in the upright which are placed a little behind the long axis of the pencil so as to tilt its point forward. To use the pencil-holder lay the limb on a sheet of paper on a smooth table or drawing-board so that the plane of the section (the contour of which it is desired to record) is parallel to the paper. The front edge of the pencil-holder is then applied to the limb, whilst the base is firmly pressed down on the table and the apparatus is thus run round the part. The height of the upright should be (for the lower limb) five inches at least. This simple tool can be cheaply made by any carpenter or amateur. I have made the one shown in the engraving for my own use and find that it works well.

Seymour-street, W., April 18th, 1893. E. MUIRHEAD LITTLE.

COLONIAL PRESENTATIONS.—Mr. Walter Hull, M.D., Lond., L.R.C.P., M.R.C.S., on his retirement from the medical superintendentship of the Sydney Hospital, New South Wales, has been the recipient of the following presentations—namely, from the honorary medical and surgical staff of the hospital a handsomely illuminated address, a marble clock (suitably inscribed) and a silver claret jug; from the nursing staff an illuminated address and a silver-mounted travelling bag; and from the resident medical officers and the lay staff an illuminated address, accompanied by a solid silver inkstand.—Mr. Michael Joseph Collins, L.R.C.S. Edin., J.P., of Clermont, Queensland, on resigning the resident surgeonship of the Peak Downs Hospital, Clermont, has been presented by the local friendly societies with an address and a piece of plate, and by the hospital staff with a set of gold studs and sleeve links.

THE LANCET.

LONDON: SATURDAY, APRIL 29, 1893.

THE report of the Leprosy Commission in India will be officially laid before the public by the Executive Committee of the National Leprosy Fund on Monday, May 1st. In what we now intend to say concerning this report, we propose to chiefly limit our remarks to two parts of it, which, in our opinion, are deserving of the close attention of all medical men who take an intelligent interest in the study of the means whereby the pest of leprosy may be lessened, and even, by-and-by, removed from mankind. These two parts, with which we are now about to deal, will be found in the report under the respective headings of "Conclusions" and "Practical Suggestions." The "Conclusions" at which the Commissioners arrived concerning leprosy, after they completed their investigation of that disease in India, are given in the report in six short paragraphs. These run as follows:—"1. Leprosy is a disease *sui generis*; it is not a form of syphilis or tuberculosis, but has striking etiological analogies with the latter. 2. Leprosy is not diffused by hereditary transmission, and for this reason, and the established amount of sterility amongst lepers, the disease has a natural tendency to die out. 3. Though in a scientific classification of diseases leprosy must be regarded as contagious, and also inoculable, yet the extent to which it is propagated by these means is exceedingly small. 4. Leprosy is not directly originated by the use of any particular article of food, nor by any climatic or telluric conditions, nor by insanitary surroundings; neither does it peculiarly affect any race or caste. 5. Leprosy is indirectly influenced by insanitary surroundings, such as poverty, bad food or deficient drainage or ventilation, for these by causing a predisposition increase the susceptibility of the individual to the disease. 6. Leprosy in the great majority of cases originates *de novo*, that is, from a sequence or concurrence of causes and conditions, dealt with in the report, and which are related to each other in ways at present imperfectly known."

With regard to the first of these "Conclusions," it is hardly necessary to do more than to state the fact that its truth is already accepted by almost, if not quite, the whole medical profession. Those few who advocate the view that leprosy is a form of syphilis, or of tuberculosis, have received no support in their peculiar belief from the results of modern research. Therefore, no more need be said here on this subject. With regard to the last clause in Conclusion 1, a perusal of the report itself will show the reader that the Commissioners here seem to wish to emphasise their acceptance of the now common belief that leprosy, like tuberculosis, is caused by a living organism, and that these two diseases appear to originate in ways which are nearly alike. It is important to note that, not in one place only, but again and again in their report, the Commissioners, in the clearest words, state their acceptance of the truth of the observations which go to prove that leprosy is the result of the action in the human body of the bacillus of leprosy. In Conclusion 2 the Commissioners give the weight of their authority to the view that leprosy is not "diffused by hereditary transmission." In the body of their report the Commissioners give, at great length, their reasons for arriving at this conclusion. They have, during their Indian experiences, collected much evidence touching upon this question, and we think they have by their work materially strengthened the already very strong position of those who hold that there is no such thing as an increase of lepers due to hereditary transmission of the disease. But it seems to us that all questions as to the diffusion of leprosy by hereditary transmission are definitely settled by the facts, now well-known, which are told in the story of the 160 lepers, emigrants from Norway, who settled in America more than fifty years ago, and made their homes there in the States of Wisconsin, Iowa and Minnesota. In THE LANCET of March 26th, 1892, was published an interesting and important communication concerning these lepers—or some of them—and their descendants, to the fourth generation. This communication was an official document sent to THE LANCET by Dr. HEWITT, the Secretary and Executive Officer of the State Board of Health, Minnesota, U.S.A. This report closes with the following quotation from Dr. HANSEN of Bergen, who visited America in order "to study leprosy in the immigrated Norwegians and their descendants." These are his words: "Of about 160 lepers who have immigrated into the three States named (Wisconsin, Iowa and Minnesota) thirteen are alive, whom I have seen myself, and perhaps three or four more. All the others are dead. Of all the descendants of lepers (and these include the great-grandchildren of some of them), not a single one has become leprous. This is, in short, the result of my investigations." In several important points we wish that the report sent to us by Dr. HEWITT had gone more into detail; but it endorses in the fullest manner the statement made by Dr. HANSEN, and quoted above. To us it seems impossible that the theory of the hereditary transmission of leprosy, in the face of such evidence as this, can be permitted for a moment longer to occupy the serious attention of medical men. It is a theory which has been killed and buried: we do not believe it will ever rise from the dead.

For reasons to be stated soon, we postpone what we have to say about No. 3 of the Conclusions until we come to deal with No. 6.

In Conclusion 4 the Commissioners express their disbelief in "any particular article of food" being a possible originator of leprosy. There is in their report a considerable mass of evidence touching this question. Especially does this evidence bear upon the alleged causal connexion between the eating of fish and the prevalence of leprosy. The evidence devoted to the fish question occupies eight pages of the report, and contains tables compiled from facts obtained from forty-seven leper asylums in India. These facts are embodied in one short table, and the Commissioners thus close this branch of their inquiry: "It will be seen from this table that 23 per cent. of well-marked lepers:" [in these forty-seven asylums] "had never tasted fish, whilst a very large number only used it now and then." A little lower down on page 344 we find these words: "There is thus, in the opinion of the Commission, no doubt that the consumption of fish is not the cause of leprosy." And so, we would fain hope, is this theory, like that of the hereditary trans-

mission of leprosy, decently laid to rest for ever; but it is possible, perhaps probable, that this hope is doomed to disappointment. It appears from Mr. HUTCHINSON'S expression of dissentient opinion, which he appends to the Memorandum on the Report of the Leprosy Commissioners, drawn up by the Special Committee appointed for the purpose, that he still insists that leprosy "may begin independently of personal contagion and in connexion with climatic and dietetic causes."

We do not propose to discuss what remains of Conclusion 4. It may be, as most things are, possible, but it can only be in this sense, that there lingers, here and there, the belief that "climatic or telluric conditions" or "insanitary surroundings" originate leprosy. To dwell on such oddities of belief as these would, it seems to us, be quite useless. In the last clause of Conclusion 4 the Commissioners state that they find that leprosy does not "peculiarly affect any race or caste." This piece of evidence is of importance, because it adds weight to the already common observation that leprosy may attack any man, no matter how excellent may be the sanitary conditions of his surroundings, provided he come into contact, more or less intimate, with a leprous community.

In their fifth Conclusion, the Commissioners record their recognition of what is now generally accepted as true of diseases which "spread" amongst men. Their statement of opinion is, that they regard leprosy as "indirectly influenced by insanitary surroundings, ... for these, by causing a predisposition, increase the susceptibility of the individual to the disease." Very rightly, as it seems to us, this opinion, in the view of the Commissioners, bears upon a much more important aspect of the problem which they attempted to solve in India, than does any question of inherited family predisposition to leprosy. This they recognise as a probable factor in the spread of the disease, but, as we understand their report, they do not attach to heredity in this connexion anything like the prominent part that is often ascribed to it, even in these days.

We propose to deal next week with the Conclusions numbered respectively 3 and 6. There is certainly no more important statement of opinion in the whole report than is contained in these two paragraphs.

THE International Sanitary Conference of Dresden concluded its labours more than a week ago, but as yet no definite account of its results has been announced in this country. Foreign journals, notably those of Germany and France, have, however, given a general summary of the conclusions which were arrived at, and both from these and by means of information received from special correspondents a general account of its proceedings has been made known. The delegates undertook during the sittings to maintain secrecy as to the debates, and they seem to have complied with the regulation by which they thus bound themselves, but it is difficult to understand what there was to call for secrecy, and it is still more difficult to appreciate the reasons for delay in the publication of the results achieved.

All the nations of Europe were represented on the occasion, some of them sending as many as five delegates each; and nearly every country despatched both diplomatic and technical representatives to the gathering. Ten or eleven of the delegations signed a Convention before separating—Germany, France, Austria-Hungary, Russia, Italy, Belgium and Holland being amongst the number. Our representatives were, as already announced, Mr. G. STRACHEY, British Resident Minister at the Court of Saxony, Dr. THORNE THORNE, of the Local Government Board, and Mr. H. FARNALL, of the Foreign Office, and they, together with the representatives of several other countries, left Dresden without signing. For some reason or other Great Britain stood in this respect in the same position as the least advanced nations in sanitary progress, such as Turkey, Greece and Portugal; but there is every reason to believe that this alliance was one of accident only and that the Government of this country has only deferred for a short time signifying its general approval of the labours of the Conference. Indeed, there is a very common impression that no former Conference has ever come so near to realising the system which has always been advocated in this country as to the prevention of cholera and that both as regards traffic by land and by sea the conclusions of the Dresden gathering are more in accordance with English notions than was regarded by many as possible. Indeed, it is this very progress in the direction of our English attitude that has been a barrier, on the part of a few Governments, to at once accepting the decisions arrived at.

According to an account submitted to the Comité Consultatif d'Hygiène de France, the principal measures of restriction which have hitherto been adopted as to traffic on land from one country to another, and which have made the movement of persons and of merchandise vexatious in the extreme, are to be abandoned in the future. This is especially so as regards merchandise; for it has been decided that but very few articles are to be deemed capable of conveying cholera and that no measures or prohibitions are to be applied to any but these. We trust, therefore, that we have heard the last of merchandise and food supplies being blocked at frontier stations and that even in our own country a lesson will be learned by those who in a moment of panic have wanted to stop the entry into England of a number of articles which, by reason of their character or their method of packing, ought never to have been regarded with suspicion in connexion with a disease which attaches much more to persons than to things. The French delegates refer to certain measures of disinfection as to body linen that will still be permissible; but it may be hoped that even this practice will be tempered with reason in its application in so far as healthy travellers are concerned. They also refer to a "passport sanitaire," but we may be certain that no such document will ever be demanded of persons arriving either in this country or in some of the more advanced countries on the Continent. They are as useless as passports always have been when applied to political purposes; they can always be so supplied as to avoid giving true information as to the locality of origin, and such measures tend largely to discount the value of an efficient sanitary administration, which must, after all, be the main object to aim at. But, on the whole, it is clear that the removal of restrictions and hindrances to free movement largely actuated those who assembled at the Conference.

As to measures by sea, we are glad to observe from the published regulations that one important principle of the Venice Convention is adhered to. The regulations apply not so much to arrivals from certain ports as to the actual state of the vessels reaching given places, and such regulations as have been drawn up seem to be limited to (1) vessels having cholera on board and (2) vessels having had cholera on board within seven days before arrival. As to such vessels, we notice a reference to the isolation of the passengers under "observation"—a term which has come with some nations to be regarded as more polite than that of quarantine; but its application seems extremely limited both as regards the character of the vessels coming within its scope and also as regards its duration. In England we know nothing of "isolation" in connexion with "observation" of healthy persons, and we may take it for granted that nothing of the sort will be attempted in our ports. Indeed, we would go further and add that we feel certain that the Governments of some of the other countries with whose ports we are in frequent and daily communication can have no intention of applying a measure which is, in the main, a useless one, and which must necessarily involve a large waste of money and of time and simply drive trade and passengers away. When the terms of the Convention are published we shall see how far these remaining restrictions which still retain a savour of quarantine have been agreed to as a sop to countries which, by tradition, cling to restrictive measures; but we are able even now to announce that, judging from the general impression gained by those who have had means and opportunity for forming a judgment, only a small and unimportant vestige of these ancient practices will find a place in the Dresden Convention, and that if, in the end, the whole of Europe should assent to the new code of rules which has been laid down, the gain to British and foreign commerce by sea will hardly be less than that which it is hoped has been achieved as regards land and river traffic on the Continent of Europe. Conclusions have also been arrived at as to the navigation of the Danube—a matter which from the first seemed to be involved in much difficulty; but, on the other hand, it is announced that British India will be expected to deal more stringently than heretofore with that portion of her pilgrim traffic by which cholera so often reaches the Red Sea and the confines of Europe, and that something is also expected by way of improvement as regards the quarantine restrictions imposed by some of our colonies. The subject of pilgrimages is to be dealt with at a future Conference, which France undertakes to convene, and discussion as to this is sure to raise the further question as to what has been done and what is still being done to stay the progress of cholera in and beyond the limits of that portion of our Empire which has been styled the "home of cholera."

ITALY and her capital Rome have witnessed many "meetings of monarchs," but never in circumstances so interesting as the present. On former occasions when crowned heads, particularly in the Italian peninsula, congregated it was generally on the conclusion of a devastating war, as the prelude to an armistice, or to a conditional peace more or less prolonged. Far other than this has been the motive that has brought together the King of Italy and his Royal and Imperial guests of Western and Central Europe. Queen VICTORIA received in her Florentine villa the duteous visit of the representative of the youngest of the great Powers whose well-ordered and peaceful reign has rendered possible her sojourn in his dominions, and whose Government, inspired at many points by British precedents, ensures the untroubled enjoyment of a *villeggiatura* owing much of its restful and restorative virtue to the presence of a loyal and industrious population placed once more on the path of progress and prosperity. No two monarchs in Christendom have yet confronted each other with a nobler record of services vouchsafed to their respective peoples or with a more honourably earned title to the exalted positions they fill. The long reign of Queen VICTORIA has been the history of social reform and rehabilitation, every stage in which has been but the stepping-stone to yet further and higher philanthropic developments. King HUMBERT'S rule of fifteen years has been not less distinguished by salutary innovation and popular advance. True to the traditions of his house, he has always been a combatant—a combatant, however, in fields yet more distinguished than those on which his ancestors won their laurels. CHARLES ALBERT and VICTOR EMANUEL often enough looked death in the face under the "lurid light of battle," but never with a serener self-possession than King HUMBERT during the cholera explosion at Naples or the earthquake at Casamicciola. On the latter of these occasions His Majesty rescued with his own hands the still surviving inmates of tottering houses from which the gendarmerie recoiled, and on the former he plunged into the most noisome tenements ever occupied by human beings to bring comfort and medical relief to the panic-stricken sufferers from the "Asiatic scourge." Repeatedly on the same day, as described in these columns at the time, he had to retire from one pest-smitten haunt after another to have his clothes burnt, but never failed to return and resume his march from bedside to bedside, till his attendants, in alarm for his life, besought him to remember his dynasty and to save himself for his people. "I am true to dynasty and people alike," was the reply, as again he turned into the dimly-lighted abodes of disease and death. During all the week thus spent in Naples till the scare had subsided and the epidemic began to wane, His Majesty's food and drink were daily supplied from Rome, but without his knowledge; for even this precaution he had neglected in his anxiety to share the risks and to alleviate the pangs of the lowliest amongst his people.

The coming of the German Kaiser to the Quirinal has also its significant aspects, though, unlike those of the visit of King HUMBERT to the British Queen, they have their bearing on the future rather than on the past. The goodwill between the Houses of Savoy and Hohenzollern is, indeed, hereditary; but political alliance, though less than common sympathies and coinciding interests, tends to deepen and to perpetuate it. With the young Kaiser the social question—by which is meant the rescue and the rehabilitation of the depressed masses—is forcing itself on his attention at the expense of that militarism which in the earlier years of his reign possessed for him so absorbing a fascination. To no brother monarch could he, with a surer confidence, have turned for moral support and intelligent coöperation than to King HUMBERT; in no brother monarch could he have found a finer exemplar of

the fact that "peace hath her victories not less renowned than war," and that higher courage and more honourable distinction may be won in the conflict with physical and social evil than in the collision of armed forces on the stricken field. To "rectify the frontier" of mental and material well-being, to elevate humanity to an ever-ascending vantage ground commanding wider and more world-embracing horizons, to feed and foster the spirit of reciprocal self-sacrifice till "all men's good" becomes "each man's rule"—such is the field, such the service on which monarch may now engage with monarch in beneficent rivalry. Nor is it at the Quirinal only that the young potentate of central Europe will be brought into sympathetic and salutary touch with a kingly embodiment of care for the struggling masses and of self-denying endeavour for their amelioration. At the Vatican the Pope exemplifies the truth that the Church as well as the State, if it is to survive as a master force in human affairs, must busy itself with the secular as well as the spiritual needs of humanity. Allocution alternates with encyclical from the pen of the Pontiff in illustration of the fact, and in the colloquy of the Emperor WILLIAM with LEO XIII. it is an open secret that social problems in which the German Empire is vitally interested and for the solution of which the coöperation of the sacerdotal power is imperative formed the subject of an "exchange of ideas," preparatory to reciprocal action in the common field. The philanthropic spirit is indeed abroad, and the most exalted of the earth are forced to breathe its atmosphere if they are even to exist, much more if they are to live the "vita vitalis" worthy of their better selves and their nobler ideal. The subordinate personages of Royal or Imperial rank who have been assisting at the august interviews in Rome must also feel the presiding influence and return to their several spheres with a quickened sense of the duties that are now coextensive and, indeed, synonymous with dynastic rights. Such an awakening to the necessities of the time comes not a moment too soon, if Europe is to be spared a repetition of the convulsions which shook her from centre to circumference just a century ago.

IT would of course be premature to form any conclusions on the subject of death certification or to comment on the evidence which is now being given before the Select Committee of the House of Commons under the chairmanship of Sir WALTER FOSTER. We will only say that so far it promises to supply material for certain amendments in the process of death certification and that the evidence, as reported in THE LANCET last week and in our present issue, ought to be read by every medical man who wishes to assist in making this branch of State information complete and valuable. The Committee is an excellent one, and has in the person of Sir WALTER FOSTER a good chairman. Our immediate purpose to-day is to single out a brief sentence or two from the interesting evidence of Sir BRYDGES HENNIKER, Registrar-General for Births, Deaths and Marriages for England and Wales, which are of great public importance. The sentences are those in which he shows the progressive decline in the number of deaths uncertified by registered medical practitioners. The steadiness of this decline is well shown by the figures which were quoted by the Registrar-General and which we may here reproduce. There were registered in 1891, the last year for which returns are completed, 587,925 deaths. In the case of 539,341, or 91·8 per cent., they were certified by registered medical practitioners; in the case of 32,432 they were certified after coroners' inquests, whilst the remainder, 16,152, or 2·7 per cent., were not certified. The figures for the last ten years show how regular has been the decline of these discreditable cases. They are as follows: in 1881 the uncertified deaths were 4·1 per cent.; in 1882, 3·9 per cent.; in 1883, 3·7 per cent.; in 1884, 3·6 per cent.; in 1885, 3·5 per cent.; in 1886, 3·4 per cent.; in 1887, 3·3 per cent.; in 1888, 3·1 per cent.; in 1889, 2·9 per cent.; in 1890, 2·8 per cent.; in 1891, 2·7 per cent.; and in 1892, 2·7 per cent. The reduction by thousands in the number of uncertified deaths is a matter for congratulation whatever the explanation to be given of the fact. It surely is a discredit to a civilised community that many of its members die unattended in illness by a recognised and registered medical man. There are countries in Europe—and we fear there are districts in England—where medical attendance is a sort of impracticable luxury, where pain has to be endured that might be relieved and death occurs where it might be prevented by medical or surgical art. In a country like Norway, for example, we have been informed that there are inhabitants twenty or thirty miles away from the nearest medical help; and if our accounts are reliable similar disadvantages are the lot of not a few in the more sparsely peopled districts of our own country. In the remote Highlands and islands of Scotland, as we showed last year, there are districts where the only friend left in cases of severe illness is the parish doctor, who has often to fulfil the threefold office of nurse, doctor and even undertaker. The infected cottage may be on a lonely moor or island, or if there be neighbours they fly from the case, for which, with our yet imperfect sanitary system, there is no adequate provision. But amongst ourselves in the more densely populated countries of England and Wales we have 16,000 deaths of which no medical account is given. It would be satisfactory if the Select Committee could tell us in what districts of England and Wales these deaths take place. There are solitudes of misery in great cities as well as on lonely moors and islands, and we fear that not a few of these uncertified deaths occur in them with no attendance beyond that of a herbalist or a chemist or some other form of unqualified practitioner. Every incident in such cases should be elucidated, and every element of destitution and neglect should be exposed, till the scandal to our humanity and civilisation is removed.

It is pitiable that any human help should be absent to dying people, but the most conspicuous absence is that of the medical man, whose ready help is supposed to be "ever nigh"—

> "Where hopeless Anguish pours his groan
> And lonely Want retires to die."

The Registrar-General's explanation of the decreasing number of uncertified deaths is as satisfactory as the fact itself. He attributes it to the people becoming more alive to the advantage of employing registered medical practitioners. It is pleasant to the medical profession to think that, like the precious metal, it is undergoing a process of ever-increasing appreciation, and that the number of the people

who from folly or misfortune fail to avail themselves of its services is a steadily decreasing one. We could wish for other evidence of this fact than the mere steady decrease in the number of uncertified deaths. The investigations of the Select Committee, carried a step further, would probably show that in the case of thousands of the certified deaths the request for medical attendance was too long delayed. Be this as it may, in civilised States few such cases should happen. Where the circumstances of the poor do not admit of medical assistance the State should provide it; but the great bulk of the people are without excuse if they fail to secure the help of a profession which is as indispensable to the poor as to the rich and which has always been conspicuous for its willingness to attend the poor on most considerate terms. There are still, we fear, some who do not appreciate the great science which has stemmed the tide of cholera, deprived small-pox of its terrors, introduced the benefits of antiseptic surgery and added years to the average life of man; but they are a diminishing number, and all men of sense perceive that they should come to terms with the profession of medicine as with one of the necessities of life, and recognise it as the practical exponent of some of the greatest benefactions of science.

Annotations.

"Ne quid nimis."

THE WATER-SUPPLY OF CHICAGO.

THE first batch of American notices of the report of our Special Sanitary Commission has now come to hand, and we are glad to observe that for the most part they exhibit a very just appreciation of the nature and importance of the objects which we have had in view. The present notices are necessarily based upon telegraphic *résumés* of our results, as time has not yet been given for the arrival of the return mail; it is, therefore, the more gratifying to us to notice that the points of chief practical importance have received due prominence in the Transatlantic discussion. Some few of the newspapers just received contain in an expanded form the censorious remarks attributed to Dr. Ware, the Commissioner of Health for the city of Chicago, which formed the substance of a Reuter's telegram republished and commented upon in our issue of the 15th inst. From Dr. Ware himself we have, however, received a letter, probably not intended for publication *in extenso*, in which he expressly disclaims responsibility for these observations, which would seem to have originated in the imagination of a newspaper reporter. It now appears that when the first notice of our article appeared in the American press a reporter called to interview Dr. Ware and interrogated him as to his personal knowledge of the steps that we had taken in the conduct of the inquiry. Dr. Ware's knowledge was limited to the communications which had passed between ourselves and the Mayor of Chicago, and through the Mayor with the Commissioner of Health, and the observations attributed to him, to which we replied a fortnight ago, are now shown to have been, one and all, grotesque misinterpretations of remarks made in a more or less general conversation, not about our report or our proceedings, but about the possibilities of mistake in an investigation of the kind that we had in hand. It is with sincere satisfaction that we find ourselves in a position to add to our previous comments the present explanation, for we have no desire to be entangled in a controversy with the authorities of Chicago, and in the circumstance that Dr. Ware has spontaneously written to disclaim the strictures so improperly attributed to him—since his letter, being dated the 13th inst., cannot possibly have been elicited by anything that we have published on the subject—we find a pleasant confirmation of the belief which we have cherished from the first, that when our results became publicly known the city authorities in Chicago would not refuse to accept in the spirit in which it was tendered our endeavour to coöperate with them for the public advantage.

PREVALENCE OF FEVER.

THE reported returns of scarlet fever in the large towns and cities of England and Wales oscillate from week to week. During that ended April 15th the numbers were 100 less than during the previous week, amounting to only 1100. London is responsible for more than a third of these, the next towns in order being Leicester, Sheffield, Liverpool and West Ham. An outbreak of scarlet fever in the King's Norton Union has been connected with the milk-supply from a farm; but the cows are stated to be healthy. Diphtheria exhibited about the same amount of incidence, and here again London furnished about half the total cases, Cardiff coming next. Enteric fever showed but slight comparative incidence in London, being equal to less than one-fifth the amount of the other towns. Birmingham and Liverpool come next in point of numbers. The long-continued week by week excessive prevalence of diphtheria in London is calculated to excite alarm, especially when coupled with a mortality above the average. At Bow, in the east of London, a considerable outbreak of diphtheria has taken place, involving 94 cases, 15 of them fatal. The health officer found that the spread of the disease has been due to an unnotified first case, with which many other children of school age had mixed at a children's party. The number of fever patients in the London hospitals shows a slight increase over that of the previous four weeks. The number of deaths attributed to influenza in London was 47. This disease is reported to be unusually prevalent and very fatal in some villages in Scotland.

A SCHOLASTIC SCANDAL.

THOSE who are dependent for their livelihood upon the goodwill of local boards have often to endure hardships in silence, but it would be difficult to imagine a more glaring instance than that which is recorded in this week's *Schoolmaster* (the organ of the National Union of Teachers) as having befallen Mr. Roach, the headmaster of the Upper Dicker School, which is under the control of the Arlington (Sussex) School Board. The school and the master's house, it seems, are supplied with rain water collected from the roofs and stored in a tank. During the summer, when the rain water-supply fails, water has to be conveyed from the village, a distance of a quarter of a mile. The supply from the tank often became so foul that not only had the master and family to dispense with its use in the preparation of their food, but they were almost afraid to employ it for washing purposes. The school children, rather than partake of the water for dinner, were in the habit of bringing their own supplies from home in bottles. Matters continued in this state until last August, when water could not even be obtained from the village. Mr. Roach wrote to the board on the matter, but his remonstrance was considered too trifling even for mention at the meeting. In the end Mrs. Roach fell ill, and the medical man in attendance requested the sanitary inspector to have an analysis made of the water, and Mr. Roach also communicated with the medical officer of health, the result being that the water was declared to be unfit for drinking purposes. Later, the board received a communication from the Education Department calling their attention to the water-supply

and requiring some arrangements to be made for its improvement. At a meeting of the board soon afterwards it was decided by four votes to two to dismiss the schoolmaster and his wife. We regret to say that the board have dealt out this hard measure to the headmaster and his wife, although they have from time to time complimented them upon their success as teachers. The Education Department have signified to the board their opinion that they consider the grounds upon which they have been dismissed to be improper and unjustifiable; but for all this there appears to be no redress for Mr. Roach and his wife.

WHAT BECOMES OF MEDICAL GRADUATES IN THE UNITED STATES?

WE lately noticed the fact that after a medical education in many cases not exceeding eighteen months in duration over 4000 medical graduates are turned out of the medical schools of the United States. It is almost satisfactory to learn from a correspondent in the *Medical Age* that a large proportion of these fall out of the profession, or rather never really get into it. The writer traced *after* graduation 100 of his friends, especially in the first five years, and found that 75 had to resort to other employment, 23 received a salary either additional to practice or separate therefrom, 15 became proprietors of drug stores, 3 were insurance agents, 4 "loaned money," 1 sold real estate, 1 was an agent for drugs, 1 an agent for books, 1 dealt in patent medicines, 2 were farmers, 1 a manufacturer, 2 gave massage treatment, 1 sawed wood and subsequently suicided (*sic*), 12 gave up in disgust, and 1 never tried to practise at all; 29 graduates only in 100 devoted themselves to medicine, of whom 11 associated themselves with other practitioners and in some cases succeeded to their practice.

THE HEALTH OF POST OFFICE CLERKS.

THERE is unfortunately too much reason to believe that the health of a large class of public servants has been seriously affected by the insanitary conditions under which they work. The Money Order Office in Aldersgate-street was pulled down in 1889 in order that a new wing of the General Post Office might be erected on its site, and the clerks were sent to the disused prison at Coldbath-fields. They were to occupy these very unsuitable premises temporarily, but, though four years have now elapsed, the money order clerks have still to work in the old gaol. Most of the clerks are seated in what used to be the convicts' chapel, which naturally is a construction totally unsuited for the purposes of an office. We are assured that the old chapel is chilly, damp and draughty. The sanitary arrangements are so far defective that in 1891 the Secretary of State promised that an inspection should be made by an "independent sanitary expert." We should like to inquire if this has been done, and if so with what result. But we have more serious questions to put. We should like to know whether it is a fact that there has been a very large increase of sickness among the money order clerks since the removal of this public service to Coldbath-fields. It may be urged in reply that there has been a slight increase in the staff and that the influenza epidemic caused exceptional illness. If, however, the daily attendance books are carefully examined it will be seen, we think, that the number of absences due to sickness has enormously increased. This is more especially the case at the present time, and the number of persons now away from the office for this reason will, we fear, be found to be three, perhaps even four, times as great as that recorded before the clerks left their offices in Aldersgate-street. Note should further be made of the number of deaths amongst the clerks during the three years before and the three years after the removal. Then again, why is it that so many clerks, since the removal, have suffered from boils? Were the prisoners who formerly occupied Coldbath-fields especially subject to boils? Finally is the public satisfied to seek out this old gaol when they have business to transact at the Money Order Office, or have there been, on the contrary, numerous and loud complaints? These questions call for immediate answers. The occupation of unsuitable quarters ought not to be prolonged for four years; otherwise this "temporary" removal must be the cause of permanent injury.

MEDICAL AID ASSOCIATIONS.

THE following appeared in the police intelligence of *The Times* of April 26th:—"John Hadley Reed, thirty-six, described as an insurance canvasser, of Darrell-road, East Dulwich, was charged on remand before Mr. Hopkins with obtaining the sum of 2*d.* from Sarah Peerless. He was further charged with obtaining other sums from women named Collins and Dade. The prisoner canvassed for members on behalf of a society which he promoted and conducted, under the tile of 'The Royal Oak Medical Aid Association,' to which poor people subscribed on the understanding that they were to be provided with medical attendance in case of sickness. The prisoner appears to have engaged a doctor to attend to the patients, but, according to the doctor's evidence, the prisoner had not paid him for his services. The prisoner was arrested upon a warrant by Detective-sergeant Butterworth and Detective Gordon. After hearing some evidence, Mr. Hopkins, addressing the prisoner, said: 'Perhaps if this gets into the papers this kind of thing will become exploded and you will not be able to live on people as you have been doing. I am only concerned to find whether there has been any criminal offence and there is not the shadow of one in this case. You will be discharged.'" Although we by no means wish to imply "ex uno disce omnes," we commend the above to the attention of the Committee of the General Medical Council which is investigating the relations of Medical Aid Associations to the profession.

THE QUEEN IN FLORENCE.

A FLORENTINE correspondent, under date April 24th, writes:—"This week Her Majesty brings to a close a *villeggiatura* quite memorable for its unbroken success. At a season when even the steadiest of climates are subject to atmospheric change the weather has left nothing to be desired, though from the agricultural point of view the rainfall was too persistently withheld. Cloudless skies, genial sunshine, just redeemed from sultriness by the snow-wreaths yet lingering on the Pistoiese Apennines and the heights above Vallombrosa; luxuriant vegetation, refreshing as an 'eye-douche to the eye,' and all the manifold charms of the reawakened year on hillside and watercourse, in field and grove and garden, have, for the five weeks of Her Majesty's sojourn in the Villa Palmieri made up an *ensemble* unequalled in the recollection of Tuscany for half a century. As if in honour of her British guest, 'Our Lady of Flowers' exerted herself to complete the enjoyment thus lavishly provided and through the facilities she placed at Her Majesty's disposal for profiting by the local *chefs-d'œuvre* and the thousand and one attractions—archæological, artistic and social—of city and suburb she achieved a success as ample as it was appreciated. By every sign the Queen must have recognised a change for the better in the Florence she visited five years ago. In the steady advance in those charitable organisations in which Her Majesty takes such delight she recognised the progress that invariably attends institutions of the kind when controlled or furthered under scientific or medically enlightened auspices. The continental winter city or the Mediterranean sun-trap, moreover, owe much of their popularity to the measure in which they meet the wants of the English-speaking communities, which, by the wholesome and refined innova-

tions they introduce, are, in the judgment of foreigners themselves, the pioneers of those decencies and amenities of life without which it would hardly be worth while living. Year by year Italy is profiting by the sojourn of such visitors, and year by year she is earning a fuller title to their presence within her borders. She has awakened to the perception that mere spectacular display or carnivalesque frivolities have no attraction for her northern guests to compare with those sanitary and hygienic arrangements the absence of which used to be the chief deterrent to their coming. Now she has but to carry the lesson a little further and treat her own people all the year round to the salutary tidiness she puts on during the sojourn of the stranger, and her still backward 'public health' will be in a fair way to satisfactory rehabilitation. She has advantages not shared in equal proportion by other European countries for the attraction of the foreigner. Her history and her monuments in architecture, in sculpture and in painting give her a preference which her fine winter or vernal climate would of itself be insufficient to secure. The mental restoration effected by a sojourn in such a city as Florence is as important as its meteorological influences, and of this no one is more practically appreciative than Queen Victoria. Culture, always desirable for its own sake, becomes doubly so when it is thus made the means of moral distraction and reinvigoration—when it asserts its claim to the therapeutic value which no wise physician would withhold from it. Her Majesty returns to the 'cares that link with Empire' the better in mind and body for her residence in Italy's 'modern Athens,' and in this respect she reinforces the truth that change of scene and climate is twice as efficacious when the qualification of pure and refined tastes in the mental or artistic sphere accompanies the residence prescribed by physical requirements in such a city as Florence."

TREATMENT BY DRUGS.

IT is a significant sign of the attitude of the medical profession towards the question of treatment of disease that an outspoken belief in the efficacy of drugs is not now an uncommon thing. It is not a great many years since medical science emerged from that mass of empiricism which had grown round it in the Middle Ages, and perhaps no more interesting or amusing occupation can be found than in trying to arrive at the reasons which in those old days prompted or suggested the use of certain drugs under certain conditions and to effect certain objects. With this emergence from empiricism, bringing with it as it did the foreshadowing to some extent of rational treatment, there came the natural and inevitable scepticism as to the efficacy of drugs, leading too often to a bold negation of their usefulness under any and every circumstance. But, as history is said to repeat itself without ever evoking exactly the same condition of things, so treatment by drugs at the present time bids fair to assume its ancient importance and to occupy much of the attention of everyone who has sufficient courage to confront our pathological conceptions of disease with some remedy for the use of which there is a rational foundation. No doubt the reason for this lies in the great advance that has taken place in two different directions. In the first place, many diseases are now recognised as the effect of toxic substances, using the word "toxic" in its very widest sense. Many of these toxic substances are of the nature of chemical compounds, and it is scarcely surprising, considering the enormous strides which scientific chemistry has recently made, that a hope should be born, that antidotes for some of the poisons may be discoverable, or that something may be found the application of which may render the morbid process impossible. In the same direction also is the search for some remedy for combating those probably disturbed internal conditions which underlie many of what, for want of a better name and more exact knowledge, we term "functional" diseases, and it is significant to find an authority of the high standing of the latest Fothergillian medalist declaring his growing belief in the efficacy of drugs in the treatment of disease. We cannot do better than quote some of his own words: "I have been surprised," he says, "at the amount of good that has been done in affections commonly looked upon as intractable—relief, arrest and restoration. With each successive year's experience it seems to me greater and more distinct and to elicit more gratitude from the patients to whom it is applied." These words are very encouraging, and we have no doubt that during the next few years there will be discovered even more potency in the weapons already at our disposal, as most certainly new ones will be revealed.

THE SMALL-POX EPIDEMIC.

SMALL-POX shows no signs of abatement, and in some towns its prevalence is maintained and persistent. During the past week Birmingham had 30 attacks, Chadderton 22, Oldham 19, Halifax 17, Manchester and Bradford 14 each, Salford and Rowley Regis 12 each, Leicester 8, and Bristol 6. Some of the hospitals contain large numbers of patients. Thus at Leeds 106 cases are under isolation, at Halifax 70, and at Bradford 30. At Birmingham, nearly 90 cases are in the hospital, and it is alleged that the disease has been markedly rife in the neighbourhood of that institution. Amongst other places where cases of the disease occurred last week are Barrow, Batley, Burnley, Burton-on-Trent, Blagdon, Bootle, Consett, Keighley, Liverpool, Longton, Lancaster, Middlesbrough, Rotherham, Salford, Southampton, Sheffield, South Shields, Sunderland, Sittingbourne, Thetford, Wakefield, West Bromwich, West Ham, Wigan, Willesden and Wolverhampton. In the metropolis the extension is considerable, the East-end and Greenwich being especially attacked. The number of cases under isolation in the hospital ships is now no less than 427. Vaccination and revaccination are the only trustworthy measures of prevention, and every medical practitioner should do his utmost to induce the public to submit to the operation without further delay.

PRIVATE DRAINS AND PUBLIC SEWERS.

IN two actions recently heard before the High Court of Justice property owners have sought to compel local boards to receive the sewerage of houses drained upon a system which the local authorities disapproved, and in both the attempt was successfully resisted. Moreover, the objection taken to the drains in question was in both cases the same—namely, that the drainage had been improperly carried to the backs of the houses and brought through a common conduit along a more or less inaccessible back lane, instead of being brought out at the front of the houses and there thrown into a sewer underlying the main street. The reason of the objection is plain enough. If a public authority is to be charged with the cleansing and repair of sewers it must have proper access to them, and such access cannot be secured in a back yard or alley which may be too confined to admit the necessary vehicles and apparatus or may become foundrous or otherwise unsuitable and inconvenient for the purpose. We may, therefore, congratulate the public upon the result, although in the two cases it was reached by very different means. In the case of the Queen *v.* Tottenham Local Board the judgment, given in the Court of Appeal, amounted to no more than a decision that in the particular circumstances of that case the remedy of mandamus would not apply and that the owner, if he had a grievance, must carry it to the Local Government Board and there seek redress. But in the case of Broad *v.* the Barking Local Board a much more important point was decided, it being held by Mr. Justice Day that a conduit which received the drainage from more tha

one curtilage was not a "drain" within the meaning of the Public Health Act, but a sewer, that as such it did not fall within the fifteenth section, and consequently that the local board could not be required to permit a connexion to be made between such a channel and their sewer system. This seems to be eminently good sense, and we are glad to find that it has been authoritatively laid down as law.

THE BURGH POLICE (SCOTLAND) ACT.

WE are glad to know that the pressing need of amendment of this Act, to which we called attention a fortnight ago, is being very generally recognised. Local authorities in several of the more important counties—Lanark, Renfrew and Stirling—have approached the Secretary for Scotland regarding it, and it is understood that their representations have had very favourable consideration on the part of Sir George Trevelyan, and that a short amending Bill will be introduced almost immediately. It is hoped that the Bill will pass unopposed before May 15th.

IMPERIAL SUBVENTIONS FOR PORT DISTRICTS.

MR. THOMAS ROBINSON, the member for Gloucester, on Monday last asked the President of the Local Government Board whether, having regard to the possibly early return of cholera to this country, he had considered the desirability of granting a contribution from the National Exchequer to the local sanitary authorities at the different ports in this country towards any extra expenses which may be thrown upon localities in this matter, and whether, under all the circumstances, he was prepared favourably to consider any application which may be made to him in this respect. Mr. Fowler's reply, answering the question practically in the negative, will be found in our "Notes in Parliament." Hitherto the attitude adopted by the Government has been distinctly the reverse of favourable as regards such subventions, and we imagine that a very special case and proof of very special work will have to be made out before the Chancellor of the Exchequer shows any willingness to entertain any such application. Some ports derive but little benefit from the traffic which reaches them and which at the same time imposes additional duties on them. Such cases are associated with especial hardship, but, as far as we have been able to gather, they are not, as a rule, the ports which have undertaken any very substantial burdens in connexion with cholera prevention.

POISONING BY MORPHIA.

THE adjourned inquiry into the circumstances of the death of Joseph Winfred Kay, bricklayer, which took place on April 4th, was held at Windsor on April 22nd before Mr. H. A. Marlin, borough coroner. It appears that deceased attended at Dr. Miller's surgery for the purpose of having a small abscess in the mouth lanced. When Dr. Miller returned home he found Kay waiting for him in the consulting-room. The man was somewhat inebriated, but there was nothing in his behaviour to arouse suspicion. On the same day deceased died after taking some beer. The symptoms of the fatal illness were those of a narcotic poison. At the post-mortem examination of the body no sufficient cause of death was detected. An analysis of the contents of the stomach and of some of the beer showed that each contained morphia and in quantity enough to cause death. From the contents of the stomach about one grain was extracted; but, as Mr. Fisher, the county analyst, observed, this only represented a small proportion of the amount ingested. Upon inquiry it transpired that a bottle containing a strong solution of morphia was missing from Dr. Miller's surgery, and subsequently the label of the bottle was discovered in the back garden of deceased. Information was sought of any recent sales of the drug in the district, but with negative results. One relative of deceased took some of the beer, but vomited it, and another spat it out after tasting it, probably owing to the bitter taste. Evidence was forthcoming that deceased had threatened to commit suicide. There can be no doubt that he abstracted the bottle of morphia solution from Dr. Miller's consulting room during his absence. It was fortunate that what appeared in the first instance to be a very mysterious affair was satisfactorily cleared up. There seemed a desire on the part of some of the jury to blame Dr. Miller for leaving poisonous drugs exposed, but we agree with the coroner's remarks that the same might apply to a chemist from whose shop a person might purloin a poison whilst the attention of the attendant was diverted. Dr. Miller seems to have taken reasonable care in the disposition of the morphia. It was kept in a bureau with a poison label upon it. Surely he could not be held blamable for the theft of his property by another or for negligently placing temptation in the way of a man who was partially intoxicated, and who, as it afterwards transpired, had threatened to take his life.

THE TONKS MEMORIAL.

THE first anniversary of the unveiling of this memorial at Willenhall has been fixed for Wednesday, May 10th, when a dinner will be given in celebration of the event. It is understood that the whole of the cost incurred by the erection of the memorial has been met, whilst the balance remaining will be divided between the Wolverhampton Eye Infirmary and the Wolverhampton and Staffordshire General Hospital. We may take occasion to refer in this connexion to an annotation published in THE LANCET of May 14th of last year and headed "Our Gideon Grays," in which the virtues of the late Mr. Tonks, the "poor man's doctor," were set forth. Perhaps we cannot do better than repeat a passage which forms a part of the short article to which we have referred: "Not by the gold and silver of the rich, but by the infinite multiplication of the poor man's copper and the widow's mite, had the memorial fund been subscribed, until the monument itself had reached an amplitude that, seconded by artistic design and execution, made it ..... a work of art in a community in which works of art were not too common."

THE INTERNATIONAL MEDICAL CONGRESS.

FROM Rome our correspondent sends further details as follows: "Cordial *adesioni* (pledges) to assist at the Congress come from Australia, where its proceedings are looked forward to with special interest. The Governor of Victoria has nominated as his representative Professor Bowen, an accomplished physician and ophthalmologist; whilst there has been constituted a numerous national committee which has for its general president Professor Philip Sydney Jones, M.D. Lond., and for its general secretary Professor H. B. Allen of Melbourne. This strong committee includes representatives of all the Universities of Australasia, the editors of the leading medical journals, the presidents of the principal medical societies of all the colonies and the presidents of the various sections of the last Intercolonial Medical Congress of Australasia; and it has nominated local representatives in the different centres of British civilisation in the 'island continent.' These are, for New South Wales, Professor P. Sydney Jones, of the University of Sydney, Dr. T. P. Anderson Stuart, the Hon. J. M. Creed, Dr. Fiaschi and Dr. Rennie (local secretary), with headquarters at Sydney; for Victoria, Professor Thomas Naghten Fitzgerald, of the University of Melbourne, Drs. G. A. Syme, J. W. Springthorpe, James Jamieson and H. B. Allen (local secretary), with headquarters at Melbourne; for South Australia, Professor E. W. Way, of Adelaide University, Drs. J. Cooke-Verco, M.D. Lond., E. C. Stirling, M.D. Cantab., B. Poulton, and T. K.

Hamilton, M.D. Dub. (local secretary), with headquarters at Adelaide; for Queensland, Professor Joseph Bancroft, of Brisbane University, Drs. the Hon. W. F. Taylor, M.D., W. S. Byrne, J. Thomson, M.B. Edin., and Lockhart Gibson (local secretary), with headquarters at Brisbane; for Tasmania, Mr. Richard Stonehewer Bright, M.R.C.S. Eng., Hobart Town; for Western Australia, Professor A. R. Waglen; and for New Zealand, Professor D. Colquhoun, M.D. Lond., of Dunedin University, Drs. J. O. Closs, W. Thomas, W. Fell, and Robertson (local secretary), with headquarters at Dunedin."

Writing later the same correspondent adds:—"The 'adesioni' of representatives of foreign Governments and medical schools continue to come in. The Brazilian Legislature announces as its delegate Dr. Joao Paolo da Carvalho, professor of clinical medicine in the University of Rio Janeiro. The Zurich Medical School will be represented by Dr. Justus Gaule, professor of physiology, and Dr. Otto Haab, professor of ophthalmic surgery; whilst Berlin, through its national committee (which consists of all those who were acting members of the organising or central committee for the Tenth International Congress), has addressed a circular to all German physicians and surgeons exhorting them urgently to take part at the Eleventh Congress, which is to meet in Rome. Dr. Baccelli and his colleagues have further received intimations of the constitution of subcommittees for Bavaria, Baden, Brunswick, Mecklenburg, Hamburg and Bremen, which in coöperation with the other subcommittees already formed in the Fatherland will secure a large and highly representative body of delegates, in all branches of the healing art, from every province and centre of population in Germany. The East Indian National Committee has been thus composed: President, Professor Edward Alfred Birch, M.D. Brux., Fellow of the University of Calcutta; members, Professor David Douglas Cunningham, of the Bengal Army, Alexander Crombie, M.D. Edin., and others. The Government of Tunis has also announced its national committee—President, Dr. Guglielmo Funaro."

NEW SANITARY BY-LAWS FOR LONDON.

THE London County Council is to be congratulated on the by-laws which have just been drawn up, and which are to be enforced under the Public Health (London) Act of 1891. These by-laws are a great step forward when compared with other similar regulations. Unfortunately, their effect is not retrospective, and in the main they only relate to new houses or to old houses undergoing repairs. But it is intended at some distant date to make the by-laws retrospective in their application. We fully recognise the impracticability of doing everything at once, but must still urge that there is peril in delay. In these regulations our old enemy the D trap will not be allowed in any new house. We only wish it could be removed with its companion, the pan-container, from all old houses. But there is a clause in the by-laws which may enable this to be done, and which, in any case, is a very strong and useful clause. It is Clause 26 and is thus worded: "The occupier of any premises shall cause every watercloset belonging to such premises to be thoroughly cleansed from time to time as often as may be necessary for the purpose of keeping such watercloset in a cleanly condition." The contention could well be raised that a closet with a D trap and pan-container soon ceases to be in a "cleanly condition." In any case the numerous dirty and badly kept closets that exist in London will expose the occupier of the premises to penalties which shall not exced a fine of £5 and a further penalty of forty shillings for each day the offence is continued after the serving of a written notice by the sanitary authority. This will give sanitary inspectors, in a very clear and emphatic manner, the right to insist on maintenance of the necessary cleanliness. There are also a great number of regulations relating to privies, earth-closets and cesspools, and these have retrospective action with regard to existing property. Practically they tend to the abolition of all such contrivances. For instance, Clause 20 says, "Every person who shall construct a cesspool in connexion with a building shall construct such cesspool at a distance of 100 ft. at least from a dwelling-house," or any other sort of building. Where in London would any one find space to build a cesspool with 100 ft. radius on open ground all round? We trust that these by-laws will soon be confirmed by the Local Government Board, and that the various sanitary authorities of London will see to their immediate and strict application.

SMALL-POX IN SCOTLAND.

IN Glasgow the disease is again diminishing, the cases having been only 17 and 16 in the last two weeks as compared with 32 in the previous week. One or two fresh cases have occurred in Dundee, Aberdeen and Paisley. In Montrose 7 cases in all are reported, and, as the infirmary authorities continue very properly to refuse to admit them, an old bath-house, which had last year been fitted up as a provision against cholera, has been brought into requisition, but only two of the seven cases appear to have been removed there. The accommodation is only for six beds. In the Vale of Leven the total cases are now about a dozen, but only one of them has occurred within the last fortnight. All were sent to hospital.

THE APPRECIATION BY GUARDIANS OF THE PUBLIC SERVICES OF MEDICAL MEN.

IF any one public official more than another has laboured earnestly in the interests of Warrington during the recent small-pox epidemic, it is Mr. John Gornall, medical officer of health and public vaccinator. And now there is a rumour that some of the guardians, apparently for the mere sake of a change, are thinking of reorganising their vaccination work so as to render Mr. Gornall's services no longer necessary. Some years ago Mr. Gornall, desirous of devoting himself more efficiently to his public duties, gave up private practice, and hence the rumour is the more astonishing. We sincerely trust that the guardians who are moving in this matter will remember services which are appreciated far beyond the limits of Warrington and that they will not in a heedless moment deal a blow which will have the effect of making medical men hesitate more than ever before they devote their whole time and services to the public offices which they hold.

THE LEEDS CORPORATION BILL.

AT the meeting of the Select Committee on Police and Sanitary Regulations of the Leeds Corporation Consolidation and Improvement Bill, held on April 20th the evidence of Dr. Cameron, the medical officer of health, was taken upon the advisability of permitting the erection of back-to-back houses. In his report for 1890 Dr. Cameron had expressed his opinion as adverse to this system of building houses, which were then being run up at the rate of 1200 per annum, without any due provision for a through draught, "the intervening space being largely filled up with arrangements for the accumulation of filth"—these arrangements being privy middens, which were not cleared out sufficiently frequently, although they were being cleansed more often than formerly. Dr. Cameron had, unfortunately, no statistics at hand to show that the health of people occupying such houses was worse than that of the population dwelling in through-houses, but he gave it as his opinion that the artisan classes preferred these houses, not because they were back-to-back, but on account of their lower rental. Considering the great demand for these houses in Leeds and the good health of the people occupying them, the committee resolved to

sanction the clause granting to the corporation the power to build these houses under certain conditions, but not necessarily to allow them to be built. The committee regarded their action in this matter "as covering a transition period," and they had confidence that the corporation of Leeds would carry out the sanitary law as rapidly as possible. Necessarily, the ventilation of houses built back-to-back cannot be so thorough as that of those erected in open streets, and in the stagnant air around these places foul gases and exhalations derived from inhabited dwellings must, of course, accumulate. Houses of this type have formed the subject of a special inquiry by Dr. Barry and Mr. G. Smith, the result of which has been to show that in all probability the lack of efficient ventilation is in itself a direct cause of an increased mortality from phthisis, pulmonary diseases and diarrhœa. Similar evidence has also been adduced by Dr. Ransome, who showed that the largest proportion of deaths from phthisis in Manchester and Salford occurred in back-to-back houses.

LEICESTER AND SMALL-POX.

THERE is no fear that the outbreak of small-pox at Leicester during the past few months will be forgotten by the ratepayers of that advanced borough. The *Leicester Daily Post* of Monday last gave an abstract of the voluminous evidence taken by the Hospital Committee which undertook to investigate the origin of the outbreak, the details of which had already been from time to time submitted in reports from the medical officer. The verbatim report of this evidence extends to no fewer than 471 printed pages, and the outcome of all this expenditure of time and money has been what? Practically *nil*, unless the change of front as regards the enforcement of the "Leicester system" of dealing with small-pox counts for anything. From the summary it is clear that the main object in view of those who occupied most of the time during this protracted and vain inquiry was to heckle the medical officer of health upon the question of vaccination, and it is needless to say that Dr. Priestley, who is to be condoled with on the way in which he has been treated, as well as congratulated on the temperate and firm attitude he assumed throughout, was equal to the trial. Leicester seems bent on gaining notoriety in this matter, even at the expense of its reputation; but, as the borough is not quite the hub of the universe, there is no need to take notice of its vagaries.

ACCIDENTS FROM STREET TRAFFIC.

NOTWITHSTANDING that it affords one of the most reliable proofs of commercial prosperity we would for certain reasons welcome an abatement in the overflowing volume of traffic which is daily poured along our streets. The menace to life and limb which it implies is no imaginary one, but finds every week in some quarter disastrous verification. This fact need excite no surprise. The onlooker who stands beside the busy current or from some paved islet sees it hurrying around him will rather ask why the register of street accidents is not a longer one. We freely admit that these are for the most part preventable, and we have repeatedly indicated certain points in traffic regulation which ought if carried out in practice to prove of genuine remedial value. The overcrowding caused by cabs which, without any visible connexion with a rank or other base of operations, are made simply to patrol the roadway in quest of occupation is an evil already much too long permitted. The covered van is another of even more dangerous omen, inasmuch as it practically ignores in great measure the responsibility of drivers for the safety of pedestrian wayfarers. Then, again, in spite of regulations and the vigilance of officials, the custom of apid driving is still too common. Cabmen, if the chief, are not in this respect the only offenders, as all those who have travelled "outside" an omnibus must have observed. We should be premature in closing these remarks without some reference to the duty which members of the walking majority in every community owe to themselves. The over-confidence with which persons blind, deaf, or otherwise incapacitated undertake the transit of perilous crossings has often been noticed. It is more than equalled by the open carelessness of parents who turn young children out of doors to play unattended in public thoroughfares. Such conduct as this, though it cannot be allowed to lessen the responsibility of drivers, must be taken into account if we would judge correctly either of the difficulties of their position or of the causes and preventives of street accidents.

THE GENERAL MEDICAL COUNCIL.

A STATUTORY MEETING of the General Medical Council will take place on May 23rd. Important reports by the Examination and Education Committees and the reports of Inspectors of Examinations will be received and discussed. A report may likewise be expected from the Committee on Medical Aid Associations. Cases involving questions of professional etiquette will also come up for consideration.

THE MEDICAL SOCIETY OF LONDON.

THIS venerable Society, which since its foundation has been in the habit of meeting every Monday from October to the end of April, has now resolved to imitate its younger sisters and assemble only once a fortnight. As the last ordinary meeting for the present year has already been held, the new regulation will come into force at the beginning of the next winter session.

ANTI-VACCINATION CONTEMPT OF LAW.

ANOTHER has been added to the list of instances where the persons appointed to carry out the law have deliberately agreed to promote disobedience to it. The King's Norton guardians have so distinguished themselves recently by passing a resolution, proposed by an anti-vaccination agitator, to suspend the prosecution of parents who object to have their children vaccinated. This, however, it is fair to say, was not carried without discussion and a division. It is stated that there are over 100 unions that have adopted this course. It remains to be seen whether any of them will be punished for their ignorance, as Dewsbury, Batley, and later Leicester have been.

THE UNIVERSITY OF PAVIA AND SALVATORE TOMMASI.

A HOLIDAY CONTRIBUTOR writing from Pavia, says:—"The great Lombard university was *en fête* on the 16th inst. to unveil the bust of its distinguished clinical teacher, Professor Salvatore Tommasi. The Medico-Chirurgical Society of Pavia took the initiative in the commemoration and confided to Dr. Camillo Bozzolo, Professor of Clinical Medicine at the University of Turin, the task of pronouncing the speech of the day. There was a special propriety in delegating this honour to the representative of a sister seat of learning. Tommasi during his epoch-making academic work in his Neapolitan *alma mater* had been compromised in the struggle for unity and independence in 1848 and found an exile's home at Turin, the asylum of so much that was bravest and best in the young Italy 'fifty years since.' Throwing himself with ardour and energy into the clinical department of the University, he became *privat-docent* in its hospital and found time in that capacity to complete his monumental 'Institutes of Physiology,' which was for years the text-book at all the Italian schools. Contemporaneously with Hughes Bennett at Edinburgh, he led in Italy the reaction against the blood-letting in pneumonia and pleurisy so dear to orthodox tradition and by his powerfully reasoned and

trenchantly-written letters on the subject—letters addressed to Borelli and still valued as models of medical logic—placed Turin in the van of a reform which ranks amongst the most salutary ever imposed on his country's practitioners. From Turin he was transferred to Pavia, where he filled the chair of Clinical Medicine from 1860 to 1865, in which latter year he returned to Naples, there to resume the professional work he had left abruptly in 1848. That work was once more clinical and made the Neapolitan school the centre of ideas and of practice which told sensibly on the advancement of sound medicine throughout the peninsula. He had to break down the authority of such physicians as Rasori in Lombardy and Bufalini in Tuscany—men of great and deserved renown in their generation, but basing their doctrine and practice on systems and methods which the nineteenth century was already outgrowing. His last great work was his 'Rinnovamento della Medicina Italiana,' which stamped him as an evolutionist of the decided, yet discriminating, type of Moleschott and Bamberger, and which contributed signally to the more scientific attitude now maintained by his countrymen towards medical observation and practice. Elevated, in accordance with the wise custom of continental Europe, to a seat in the Senate of the kingdom, he gave a direction and a diffusion to State medicine which is felt to this day in every centre of population, inland and maritime, throughout Italy. Such a man, on whose death on July 13th, 1888, THE LANCET commented at considerable length, deserved the pious tribute just paid him by the Lombard School in presence of numerous *alumni* from the Neapolitan and Subalpine universities—a tribute which recalls attention to the salutary influence he exerted on his compatriots by substituting accurate research in the laboratory and at the bedside for those specious but unfruitful excursions on 'the high *priori* road' which nowhere more than in Italy have impeded the progress of medicine and postponed the attainment of its ends."

FOREIGN UNIVERSITY INTELLIGENCE.

Copenhagen.—Dr. Carl Julius Salomonsen has been promoted to the Professorship of General Pathology. Dr. Julius Petersen has been promoted to an Extraordinary Professorship of the History of Medicine.

Nancy.—The Professorship of Descriptive Anatomy has been officially declared vacant.

New Orleans (*Tulane University*).—Dr. Miles has been appointed to the chair of Surgery in succession to Dr. Logan, deceased.

Vienna.—Dr. Krafft-Ebing, Professor of Psychiatry and Neurology, has been promoted from the "second" to the "first" chair, in succession to Professor Meynert, deceased, Dr. Wernicke, Professor of Medicine in Breslau, being appointed to the "second" chair.

BARON NATHANIEL ROTHSCHILD has signified his intention of placing at the disposal of a Vienna society which is concerning itself with the welfare of poitrinaires his beautiful château and grounds at Semmering in the Styrian Alps. The mansion, we are told, will afford accommodation for some 500 patients, and the money value of the gift is stated to be not less than 5,000,000 florins.

THE thirty-third annual dinner of the old students of King's College, London, will take place at the Holborn Restaurant on Monday, May 15th, at 6.45 P.M. for 7 o'clock. Mr. W. H. Preece, F.R.S., will occupy the chair. Tickets may be obtained on application to Mr. W. Vincent, at the College, and friends may be introduced.

THE Royal Commission on Vaccination held a sitting on the 26th inst. in Great George-street, Sir James Paget in the chair. Evidence was given by Mr. John Skelton, Chairman of the Board of Supervision, Edinburgh, and Mr. J. T. Marriott, of Batley, Yorkshire, after which the Commission adjourned till Wednesday.

THE LEVÉE.

THE following members of the profession were in attendance at the Levée which was held at St. James's Palace on Monday, April 24th, by his Royal Highness the Prince of Wales on behalf of Her Majesty the Queen: Sir William Savory, Dr. Phineas Abraham, Dr. Brodie, Dr. Vincent Dickinson, Mr. Wickham Legg, Dr. Douglas Lithgow and Dr. George Vivian Poore. The following members of the medical profession were presented to his Royal Highness: Mr. George Cowell, by his Grace the Duke of Westminster, K.G.; Surgeon-Lieutenant A. T. Collum, 13th Middlesex, Queen's Westminster Volunteers, by his Grace the Duke of Westminster, K.G.; Surgeon-Lieutenant Henry Nason Dunn, Army Medical Staff, by the Deputy-Adjutant-General; Surgeon-Captain Anthony Dodd, Army Medical Staff, by the Deputy-Adjutant-General; Surgeon-Lieutenant William Douglas Erskine, Army Medical Staff, by the Deputy-Adjutant-General; Surgeon-Major Alexander Samuel Faulkner, Indian Medical Service, by the Secretary of State; Surgeon-Lieutenant C. E. L. B. Hudson, Middlesex Yeomanry Cavalry, by the Adjutant-General for Auxiliary Forces; Surgeon-Major Fitzroy Beresford Maclean, Army Medical Staff, by the Deputy-Adjutant-General; Surgeon Lieutenant-Colonel Myers, 19th Middlesex Rifle Volunteers, by Colonel Smith Richards; Surgeon-Lieutenant William Phayre Ryall, Army Medical Staff, by the Deputy-Adjutant-General; Surgeon-Lieutenant W. Rose, 13th Middlesex, Queen's Westminster Volunteers, by his Grace the Duke of Westminster, K.G.; Surgeon-Major-General Broke Smith, Army Medical Staff, on promotion, by the Deputy-Adjutant-General; Surgeon-Lieutenant Hugh Stanley Thurston, Army Medical Staff, by the Deputy-Adjutant-General; and Surgeon-Captain P. P. Whitcombe, 13th Middlesex, Queen's Westminster Volunteers, by his Grace the Duke of Westminster, K.G.

FOOTBALL CASUALTIES.—The following accidents occurred on Saturday last: In a match at Dunfermline, between the Dunfermline Athletic Juniors and the Crossgates Thistle teams, a player sustained a fracture of his clavicle.—During a Rugby match at Boothstown, between Boothstown and Leigh, a player also fractured his clavicle.

SCHOOLS OF SURGERY: ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following prizes have been awarded at the termination of the winter session:—Descriptive Anatomy: Junior—W. J. Sweeny, first prize and medal; H. E. Eardley, second prize and certificate. Senior—C. B. Martin, first prize and medal; M. Carroll, second prize and certificate. Practical Anatomy: First year—W. J. Sweeny, first prize and medal; H. E. Eardley, second prize and certificate. Second year—C. B. Martin, first prize and medal; E. M. Hamilton, second prize and certificate. Third year—A. Leventon, first prize and medal; E. J. Moore, second prize and certificate. Practice of Medicine: E. A. Meeke, first prize and medal; A. Leventon, second prize and certificate. Theoretical Surgery: C. J. Fallon, first prize and medal; P. F. Morrissey, second prize and certificate. Midwifery: D. Molyneaux, first prize and medal; J. J. O'Donnell, second prize and certificate. Physiology: E. J. Moore, first prize and medal; G. E. J. Robinson, second prize and certificate. Physics: F. J. Palmer, first prize and medal; A. Hatchell, second prize and certificate. Biology: F. J. Palmer, first prize and medal; W. M. Power, second prize and certificate. Chemistry: E. M. J. O'Farrell, first prize and medal; B. Phillipson, second prize and certificate.

REPORT OF

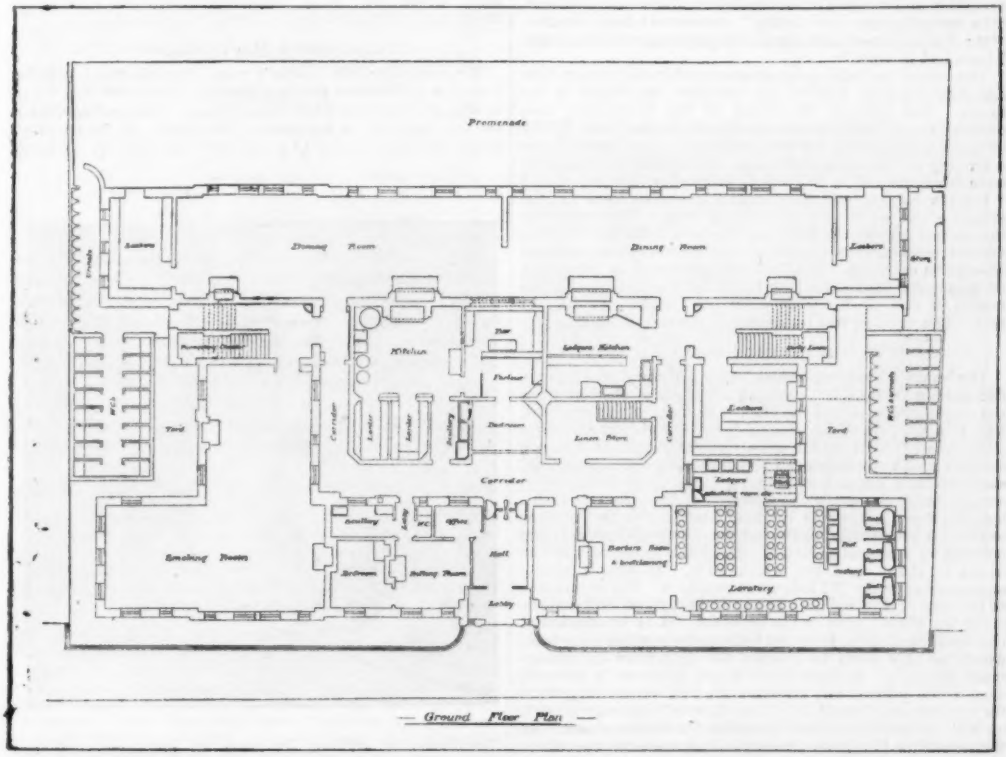
THE LANCET
Special Sanitary Commission
ON
PRIVATE ACTION IN RESPECT OF COMMON LODGING-HOUSES.

ROWTON HOUSE, VAUXHALL.

MANY years ago THE LANCET investigated the condition of common lodging-houses built by private enterprise, notably in Flower and Dean-street and other quarters of eastern London, showing the good results which followed the application of the Common Lodging-Houses Act of 1851. THE LANCET a year or two ago also described how several municipalities had succeeded in completely raising the standard of comfort and sanitation by building model common lodging-houses. It was then pointed out that private enterprise had followed this example, but had sometimes failed for want of sufficient technical knowledge. It appeared, however, that such undertakings, whether private or public, when managed on business principles, were successful not only from a sanitary and moral point of view but that the financial results were most satisfactory. In THE LANCET for 1890, vol. 1, p. 314, a vidimus of cost and financial results of the Glasgow common lodging-houses was given, in which it was shown that after paying 3½ per cent. to capital, 2¼ per cent. was actually put into the public purse for the reduction of public burdens.

Whether efficient private enterprise can attain such results is a question which can only be ascertained by experiment. In the past such efforts were not at all encouraging, as a rule ordinary, and very unsuitable premises were converted into common lodging-houses. The action of municipalities, which in several towns have taken the initiative in bringing about this necessary reform, has had a great deal to do with the awakening of private enterprise of a higher order. In Rowton House at Vauxhall we have a building which equals, and in many respects surpasses, the celebrated municipal lodging-house of Clive-street, Glasgow. It must be recognised that a municipality has far greater facilities for collecting and bringing to bear a mass of technical knowledge than a private individual. Thus the common lodging-house built by private individuals at Edinburgh was very inferior to the municipal lodging-house built at Glasgow, though at Edinburgh they had a capital of £10,000, which was more than sufficient for the purpose. It is a sign of the times that men of the position of Lord Rowton should devote themselves to this good cause.

FIG. 1.



Ground Floor Plan.

The building which we propose to describe in some detail is of such a character as will repay an effort to examine it at some length. The purpose of the undertaking is to provide for working men at a cheap rate such accommodation and comfort as will render their lives more bearable and the better fit them for their daily toil. Provision of this kind, it has often been said, is not sufficiently appreciated by the lower orders, for whose benefit chiefly it is intended. It is assumed, with what foundation we know not, that the utilisation of such lodging-houses by the class whom they most benefit will not be proportionate to the enterprise, finance, and scientific skill which have been bestowed upon their construction. This is a proposition to which, with due

respect, we do not give adhesion, for reasons which we need not here set down at length.

Rowton House is a building which has been erected entirely by the munificence of Lord Rowton, who was, perhaps, some years ago better known as Mr. Montagu Corry, the Earl of Beaconsfield's private secretary. It is built near Vauxhall-cross, a situation which gives exceptional facilities to those workmen who are likely to profit by the conditions which it offers to them. From this part of London they may easily proceed towards any point of the compass by rail, tram or omnibus. A brisk walk will take the workman to Victoria Station in one direction and to Charing-cross in the other, whence he may go forth to his labour in any portion of the metropolis. The house was designed by Messrs. Beeston and Burmester, architects, of Lincoln's-inn-fields. The works were carried out and the buildings erected by the Middle-class Dwellings Company, of which Mr. Farrant is the managing director.

Lord Rowton, when our representative visited the building, expressed his high appreciation of the care and disinterestedness which had been bestowed upon the work by Mr. Farrant and said that Mr. Farrant's company had been satisfied to receive a moderate percentage of profit on the cost of the works and had spared no effort to make the whole of the buildings thoroughly satisfactory, both as regards the general execution and working of all the details of the establishment. "In carrying out the works," continued Lord Rowton, "Mr. Farrant has shown his active sympathy with the object I have had in view."

The cost of the lodging-house amounted in all to more than £25,000, and Lord Rowton has provided the whole of the funds. The internal furnishing of the house has been expensive, the bedding and mattresses having cost £1500, or something like £3 for each bedroom. The house forms a striking architectural structure. The elevations externally have been erected in red brick, relieved with some picked "London stocks," red Newbiggin stone being used for the entrance and other architectural features. The brickwork throughout the whole building has been built in Portland cement mortar, thus protecting the various rooms from the absorption of damp. The land was purchased in the month of February, 1891, and was ready for the builders in the month of July of that year, when the foundation stone was laid. The building was completed at the end of 1892.

ACCOMMODATION.

The house offers accommodation for 470 men, but there are 432 beds in the establishment, including those necessary for the superintendent and the staff, who live on the premises. Fig. 1 is the plan of the ground floor. On passing the turnstiles the corridor, which runs right and left, is entered, through which admission can be obtained to the dining-room, smoking-room, barber's room and lavatory. The dining-rooms occupy nearly the whole of the length of that portion of the building fronting towards Vauxhall Station and the windows overlook a promenade for the lodgers. It is divided into two portions by a central partition. The total length of the two rooms is 115 ft. and the width 18 ft. It affords sitting accommodation for 192 lodgers at one time. The promenade at the rear of the building is paved throughout and extends along the whole length of the premises. It is terminated at the distance of 23 ft. from the building by a rather lofty wall, which perhaps tends to obscure the light from the dining-room windows. As regards air space, however, it serves a most useful purpose and affords a kind of recreation ground for the inmates. Indeed, it is Lord Rowton's intention to fit it up with the necessary accommodation for various games. At the same time it affords a valuable lung space for the whole of the building. The promenade can be approached from the dining-room through the locker-rooms at both ends of the building, and the urinals can be easily reached without the necessity of passing through any other room. Returning to the dining-room, it is well lighted and ventilated and contains also four large stoves, on which the lodgers are able to cook their own food should they so desire. These four stoves, together with gaslights in the evening, would render the room unduly hot, especially if occupied by 192 persons. Seeing that there is no opposite window ventilation, however, it must not be forgotten that these fireplaces serve as ventilating furnaces for the whole dining-hall; but the lodgers need not be at the pains of cooking their own food, for Lord Rowton has prepared a bar from which food of a very excellent quality may be obtained as early as six o'clock in the morning. The cost of the food is so small that we are not aware of any establishment in London where a person can be so well dieted for a less cost.

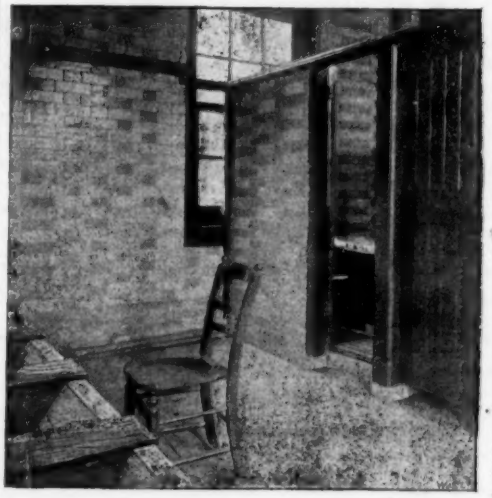
ADMINISTRATION AND DISCIPLINE.

No one, of course, could expect Lord Rowton to attain perfection at once in the way of administering and disciplining such a large concern. When our representative inquired of Lord Rowton what was the nature of the administration and discipline employed for the adequate carrying on of so large an establishment, he made the following statement: "We have," he said, "been studying our necessities in the matter of discipline; one does not wish to have too much regulation at home, and, as I wish this to be a *home* for the working man, I want a minimum of regulation." A superintendent is responsible for the administration of the house. In addition, he has charge of the catering department—a department which is worked as part of the scheme under the immediate supervision of Lord Rowton. It is Lord Rowton's hope that as the number of those who take advantage of his provision increases he will be able to reduce the food charges even lower than they are at present. On considering whether it might not be better to do away with the cooking of food by the lodgers themselves, it must not be forgotten that this means a saving in the trouble and cost of the administration. Still, unpleasantness often arises, and it is questionable whether cleanliness under such circumstances can always be guaranteed.

WATER-SUPPLY AND CLEANLINESS.

We pass from the barber's room through the lavatories into the bath-rooms and feet-washing rooms and reach one in which lodgers can wash their clothes. The accommodation for the foot-sore is adequate. Its nature can be gathered from our illustration (Fig. 2) and its cost is nothing.

FIG. 2.



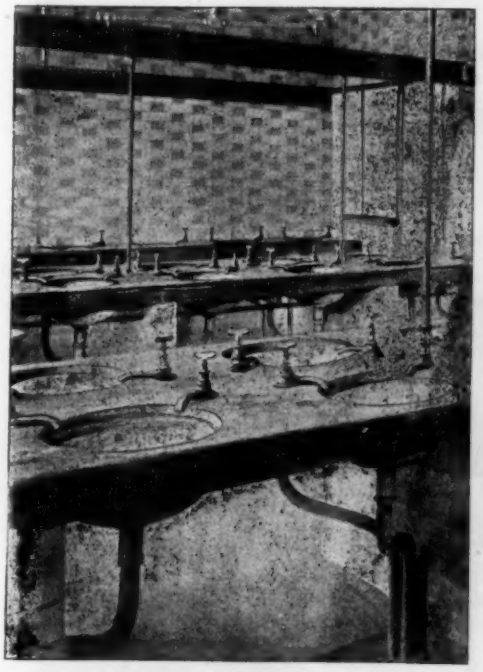
Cleanliness is said to be next to godliness, and the means of attaining it are very ample. For the sum of one penny any of the inmates can obtain a towel, a piece of soap and the luxury of a hot or cold bath. The lavatory is 26 ft. by 18 ft., and is fitted with forty-four glazed stoneware basins, which are set in slate tables. The water-supply for this number of basins, which are all furnished with hot and cold water, requires to be very abundant. So abundant is it at Rowton House that twelve taps can be running at one time. If every bed in the house were occupied this lavatory accommodation would give an average of one basin for every ten persons.

A reference to Fig. 3 will show the arrangements of the basins and taps and the mode in which the waste water is carried away. The floor is of concrete, and from end to end of each range of basins there is a central glazed channel running into a trapped and ventilated chamber out-

side the building. The floor is slightly inclined on both sides of the basins. Water spilt on the floor by careless use of the basins is immediately drained into this channel. The walls and floor alike can be sluiced all round with a water-hose, and the heating arrangements in the adjoining rooms are such that the whole lavatory is dry five minutes after the cleaning. Lavatories and baths are too often damp and sloppy places and anything but inviting to visitors, even under the most favourable circumstances. To this lavatory such terms would not apply. Those who have had occasion to visit the higher-class clubs in London should compare the lavatory accommodation there seen with that at Lord Rowton's house at Vauxhall, and they will at once agree that the latter does not suffer by the comparison.

The smoking-room (Fig. 4) is a large L-shaped building situated on the left-hand side of the house. It is airy and well furnished with tables and chairs, and is arranged in every respect so as to afford a comfortable retiring room for those who wish to smoke. The walls are of glazed brick, terra-cotta and white alternately, giving a light and artistic appearance to the room. The room is decorated with prints

FIG. 3.



of the frescoes which adorn the walls of the Houses of Parliament. Here one finds men of various ages, and no doubt of various occupations, quietly enjoying their pipes and reading the newspapers and magazines which have been provided for them.

THE READING-ROOM.

Then, on the first floor, there is the quiet, well-lighted and clean reading-room, the walls of which, as our illustration (Fig. 5) shows, are decorated with pictures and bookcases filled with useful volumes. No one can enter it without being gratified with the inviting appearance of homeliness, comfort and trust which are so pre-eminently the characteristics of everything in this room. The attention to detail is very striking. Grouped round the fire can be seen men quietly reading the best literature of the day, which is freely provided for their use. In a room like this, indeed, the nearest approach to perfection is met with, and the rough tramp or labourer will find something in surroundings like these which will probably do more to elevate his moral nature than much preaching or imprisonment. The first thing which struck our representative was the fact that all the bookcases, containing valuable and important books, were quite open and unguarded. They were, indeed, on shelves, but the cases contained no glass doors. Our representative asked Lord Rowton if it was not dangerous to leave his books thus unguarded. His reply is worth quoting: "No," he said. "When I was private secretary to Lord Beaconsfield, one of the lessons which he always impressed upon me was to trust the working man, and I have endeavoured to do so. My trust has not been misplaced. These men whom you see in this room take care of my property and respect it, and that more than repays me for any trouble that I may have taken in this building; and with respect to the bookcases I have never yet lost a single book and I do not intend to have them locked up from my men." This may be unintelligible to those who do not know the working man, but it suggests the conditions and regulations under which the public gardens on the Continent are opened to the public, in which there is merely a large poster declaring them to be the property of the public and therefore under the public protection.

Our illustration (Fig. 5) of this reading-room speaks for itself and perhaps better than any description we could give.

SLEEPING ACCOMMODATION.

Referring to the cubicles, access is prevented to them by means of iron gates until a certain time in the evening, the

FIG. 4.

reason being to prevent the inmates occupying the bedrooms during the day. The cubicles, which are reached by stone fire-proof staircases, are situated on the three upper floors, but the description of those on the first floor will suffice for the other two. The first noticeable point is that in these dormitories a cubicle is provided for each inmate. It contains a bedstead with a wire-woven mattress, a hair mattress, a hair pillow, some good bedclothes and a chair. The ship bunk principle, which is in use at many of the common lodging-houses in Glasgow and which Dr. Russell of Glasgow has tolerated, is altogether abandoned in this building. At Glasgow the beds are arranged one above the other. In one cubicle the bunk or bed is almost on a level with the floor, in the other the bed is situated about three feet from the floor and is placed above the first bunk in the other cubicle; thus the lodgers are placed one over the other without seeing each other, the lower bed forming a kind of dark cave into which the occupant must creep. The cubicles are only tolerated by reason of their being open at the top. A similar system is adopted on emigrant ships. In common lodging-houses there are many evident sanitary objections to this principle being adopted. In Rowton House no such system exists. Each cubicle contains but one person. The height of the dormitory from floor to ceiling is 10 ft., whereas the height of the partition walls separating the cubicles is only about 6 ft. 6 in., and, further, each bedroom is provided with

a window which opens separately. Our illustration (Fig. 6) shows very well the arrangement of these cubicles in rows. The lights and shadows demonstrate the through light and the capability of ventilation, both from side to side and from one end of the corridor to the other. A glance at the plan of the third floor (Fig. 7) will render this still more apparent.

The plan of the dormitory floors, which is given on Fig. 7, shows that, in the case of the cubicles situated at each of the solid angles—that is unventilated angles in which the air is impounded as it were—and which in our illustration are marked with a cross, a somewhat indifferent attempt has been made to meet the difficulty of providing light and ventilation. Originally it was intended to make three of the cubicles which occupy these angles into one large room containing three beds. Objections to this course arose, however, which caused Lord Rowton to somewhat alter his plans and to provide for each person a separate cubicle. We do not believe that the alteration improves matters so far as the angles are concerned; for, although on the first floor eight cubicles are saved, the chambers have neither adequate light nor ventilation. This is practically admitted, because the management only allot these rooms to casuals, and then only when the house is full. If what is termed the "casual lodger" should become permanent in any sense, he has at once the choice of a cubicle opening to the outer air. Considering this, we venture to doubt whether the space occupied by these corner cubicles, in so elaborate and well-constructed a building as this is, would not have been more effectively used if it had been employed to increase the cubic space of the remaining cubicles. This would undoubtedly have been an advantage in the case of those cubicles situated at the top of the staircase of each floor, and perhaps equally so in reference to the other unventilated angles. For even on the first floor, where the walls are highest and ventilation freest, the space per bed only amounts to 455 cubic feet, and in this computation the area of the corridors is included. The air of the sleeping-rooms, however, is confined between the wooden partitions, and this renders the provision of increased cubic space all the more necessary. The greater the cubic space the more efficiently can ventilation be maintained. As a means of effecting this, the space occupied by these cubicles might very well be employed as lungs for the purification of the air of the dormitories. The dormitories on the second floor are even more confined, giving only 441 cubic feet to each person, again including the corridors in the calculation. But here also the partition walls act as *minus* quantities in considering the ventilation of the dormitories by preventing the free circulation of the air and reducing the ventilating capacity of the cubic space, thus rendering still more essential the utilisation of these angles as ventilating spaces—as needful in these large sleeping-rooms as are the various parks and gardens which serve as oxygenators of the air in the densely populated city of London.

The registered common lodging-house minimum of 300 cubic feet of air space per bed is very nearly approached when we reach the top floor, where the ceiling is only 9 ft. high, apportioning to each cubicle only 380 cubic feet of space.

FIG. 5.

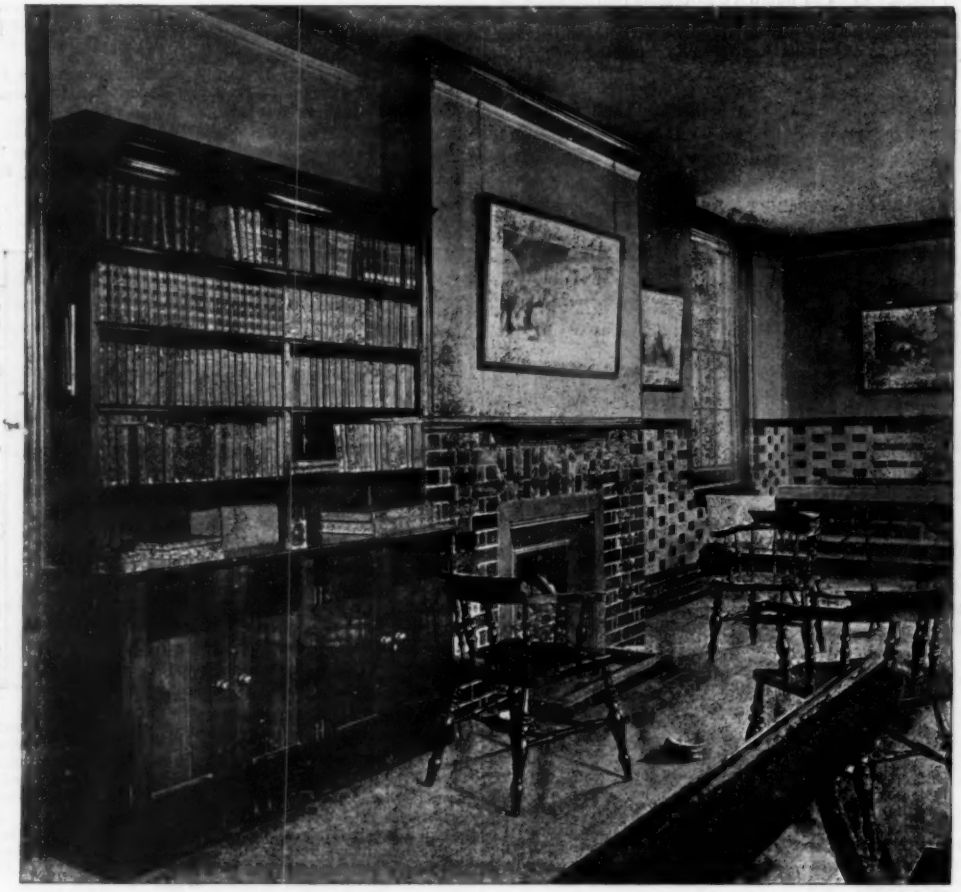


FIG. 6.

This of course is more than one meets with in many working-class dwellings; but in those the inmates are free to go and come as they choose—to open doors and windows at will—and even in the meanest country homes the fire is a perpetual source of ventilation. In buildings such as Rowton House we look for something which may be imitated; and in some portions of the building there is very much to imitate. We can well understand that it is no slight matter in an establishment of this kind to sacrifice thirty-two beds even for the sake of extra comfort for the remaining inmates. Still, we believe the sacrifice is worth making and would tend to increase the general excellence of the building. If we leave out the cubicles occupying these angles, we find provided for each bedroom a separate portion of a window, which can be opened. This admits of free ventilation in every direction, as is illustrated in Fig. 6, but it is not likely that persons occupying the rooms will sleep with the windows open at night, and thus at the very time when ventilation is most imperative it is most likely to be neglected. Indeed, some automatic system of ventilation should be added to that which is provided by the windows and the doors, and it would be worth while for Lord Rowton and his advisers to ascertain whether some extracting shafts could not be carried up to the roof in connexion with a gas jet. Other methods of adding to the ventilation of the sleeping-rooms also readily suggest themselves.

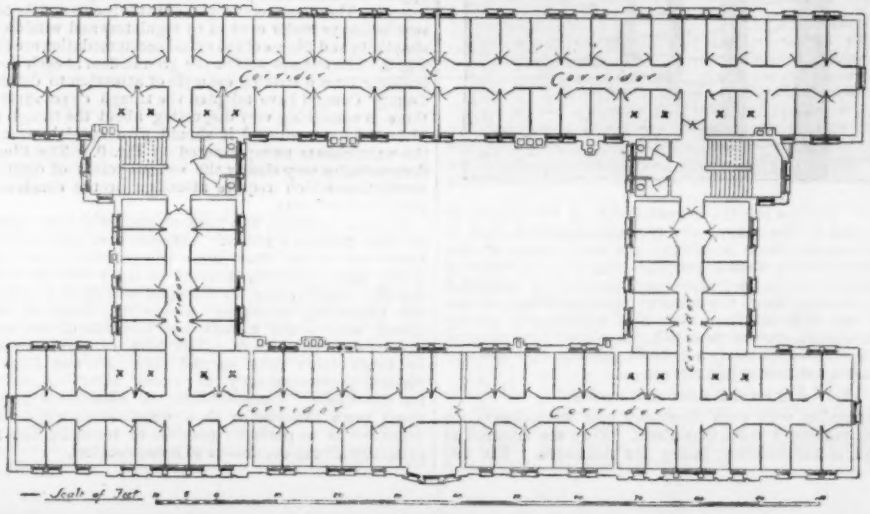
The partition walls are of wood, varnished and joined together with tongued and grooved V-shaped joints. The cubicles do not contain any cupboards or lockers, because these conveniences might act as an inducement to men to occupy the dormitories during the day; but a numbered key is provided to each man on admittance, which entitles him to the possession of a private box in which to store his belongings. Special arrangements are made for meeting the requirements of men who work all night and require to rest during the day.

As will be seen by reference to our illustration (Fig. 6), the dormitories are heated by water-pipes, which are situated along the corridors at a height of 6 ft. 3 in. from the floor. They are said to warm the place well. The illustration also shows the mode of lighting the bedrooms. Gaslights on each floor are under the control of the attendant, the whole lighting arrangements being under the command of the superintendent.

ADVANTAGES AND DISADVANTAGES.

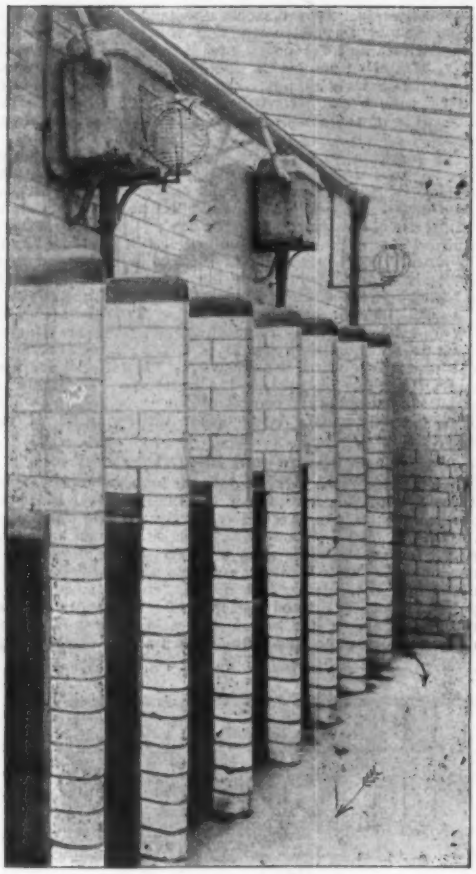
In the cubicles the lodger enjoys the luxury of being alone. To people of reflective minds it would be thought to be almost unbearable to have to forego "the solitude where none intrudes." The British soldier, from the day on which he enlists in Her Majesty's army until he gets his discharge, is never alone. There is always someone "about his paths and about his bed, spying out all his ways," and many a pious prayer is uttered for five minutes' solitude. But the conditions under which the soldier lives are very different from those under which the inmates of a lodging

FIG. 7.



house would live. The soldier after a while becomes habituated to his companions; he becomes interested, "willy nilly," in the welfare of his companions, the feeling of *camaraderie* becomes stronger and stronger, and, above all, the soldier is accustomed to discipline and a responsible person is in charge of the order of the barrack-room. He is compelled to keep not only his surroundings clean, but his body also, and his occupation is cleanly as compared with that of the dosser. Under such circumstances we do not know what objections can be urged to the large open barrack-room beyond what would be applicable to the arrangements of the beds in a large hospital. Though the cubic space in either case would remain unaltered, the free circulation of the air in the dormitories of the barrack is much less impeded than in a room containing a number of enclosed cubicles, which, unless they were freely open at the top, could not be

FIG. 8.



tolerated. Besides this the increased risk of fire cannot be ignored, and in the case of a migratory population such as inhabit barracks there is always the contingency of the woodwork affording shelter for what might in the course of propagation come to be "shoals and nations" of uninvited guests. But the life of the inmates in an institution of this kind is very different from that of a soldier, and privacy must be secured, even at some risk. A place which afforded no privacy would certainly not be in demand by those who resort to the common lodging-house.

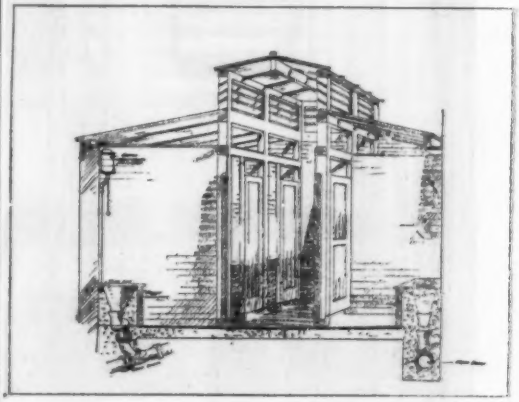
AUXILIARY ACCOMMODATION.

In connexion with each dormitory four waterclosets are provided, making a total of sixteen. They are situated at each end of the building, facing the staircases. The two closets are shut off from the staircase by a door which opens outwards, and, further, the dormitories are shut off from the staircase by folding-doors with ventilation at the top. Between the two waterclosets a sink is provided with hot and cold water. The ventilation of the closets is free, and there is practically a through draught of air cutting off any communication between the corridors and the watercloset approaches. Reference to the plan of the cubicles will very clearly show the arrangement and distribution of the closets. They are, like those on the ground floor, fitted with Doulton's short fire-clay white enamelled hopper, with fire-clay trap, all set in Portland cement concrete (Fig. 9). The risers are in white glazed brickwork, the seat is of teak, and the flushing is carried out on Winn's water waste prevention system.

ATTENTION TO DETAIL.

Evidences of attention to detail are everywhere prominent throughout the building. The tables in the dining-rooms are of teakwood, in length 7 ft., and are made to accommodate four persons. They are specially designed to afford ample knee space. The seating accommodation is specially noteworthy. Illustrations of it will be found in Figs. 4 and 5. Throughout the building many details in ventilation have been attended to. The ventilation of the corridors is specially worthy of note. The walls, wherever possible, are hung with pictures, the library is filled with books, and the walls of the sitting-rooms are light and cheery. A clock is placed in every room of the building. Writing materials are provided free of cost in a reserved portion of the library.

FIG. 9.



Pots, pans, kettles and every kitchen utensil are of the most approved kind and are provided free of charge for the use of the inmates. Thermometers are placed in the rooms and the temperature is always under control by regulators and windows. The simplicity and fitness of the urinal accommodation are shown in Fig. 8. The waterclosets on the ground floor at each end of the building form a striking example of attention to detail. The County Council have adopted the trough closet system; but there is something very disgusting about the trough system. Those who recommend it should give special attention to the waterclosets as represented by Fig. 9. The illustration demonstrates very clearly the various points of drainage and ventilation which require attention in the construction of public waterclosets.

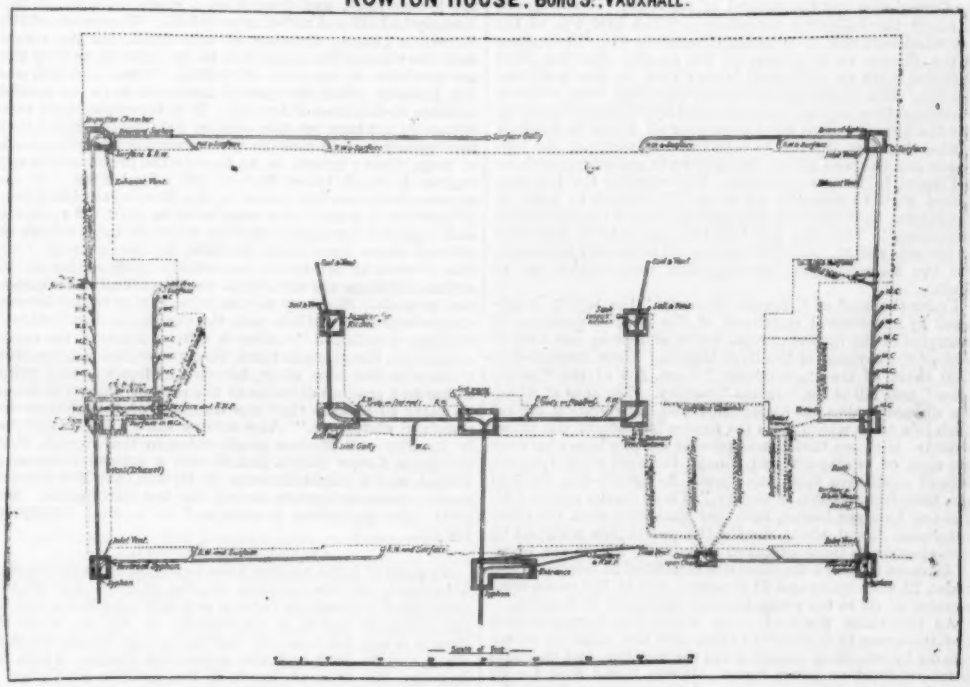
There is, however, one point of detail which we recommend to Lord Rowton's notice. Carpets, cushions and dust are known to be too often close companions. At night, to weary men, however, a strip of thick felt or cocoanut-matting placed along the passages would be a solace from the clattering, stamping, resounding tread of the late comer, who is not always too mindful of the wants of his drowsy neighbours. The idea of home would then be much more fully carried out. No one likes to be disturbed unnecessarily at home after having retired for the night. Considerations of cleanliness may be of much more importance than quietude at night; but we believe it to be perfectly possible to reconcile the two and so satisfy all the conditions of home comfort.

SYSTEM OF DRAINAGE.

The system of drainage embodies some good principles. As will be seen from our plan (Fig. 10) all the watercloset drainage is conveyed outside the building on either side, meeting the main drains in the street. To this general statement there is only one exception, and that is the drainage from the superintendent's private watercloset on the ground-floor, the soil from which is conveyed into a pipe laid in the corridor and draining out directly through the doorway into the street. There is no point in the whole drainage system which cannot easily be reached by means of manholes or open inspection chambers. The urinals are provided with open channels, thus doing away with the necessity for a sink-pit and preventing the generation of ammonia. The sinks from the kitchens and scullery are discharged into the open air over a trap-gulley, and the whole building at the time of our representative's visit was wonderfully sweet-smelling. The drains are well ventilated, as will be seen from our sketch.

FIG. 10.

ROWTON HOUSE, Bond St. VAUXHALL.



ARRANGEMENTS IN CASE OF FIRE.

The approaches to the bedrooms are of stone work, and on each floor fire-mains and hose-pipes are provided at three points. In the event of fire the windows on the ground floor would afford ready means of exit to a position of safety.

CONCLUDING OBSERVATIONS.

The utility of a lodging-house such as the one we have endeavoured to describe is everywhere evident, and it has long been a matter of some surprise to those who live outside London that better accommodation has not been provided for that portion of the community which through its misfortune, or it may be through its fault, has been driven by stress of circumstances to seek the shelter of these institutions. We have endeavoured to show some of the best points in the building and to suggest whether here and there, notwithstanding the care and attention which have been bestowed upon its construction, the structural arrangements might not be improved and the cubical capacity of the house be enlarged. The difficulties connected with such an undertaking are by no means slight, and we have endeavoured not to lose sight of the fact in the case of Rowton House. Lord Rowton and his advisers have boldly faced them, and have been rewarded with a degree of success which always crowns earnest effort.

There is no doubt that something might be said against herding mankind together in this way. The company is necessarily very mixed. It is, however, we think, superfluous to object to the common lodging-house on the ground that the company is mixed. The same remark applies generally to every collection of human beings. We would rather be inclined to extend the objects of such institutions—and the lower the class of persons accommodated the greater is the service rendered. Meanwhile we suggest to wealthy philanthropists whether it would not be worth while to erect a similar structure for the shelter of females. There is nothing more painful than to hear constantly of the difficulties with which young women, and it may be matrons, are confronted on coming from the country to seek a lodging in town. No doubt the difficulties of such an undertaking would prove to be greater than those in the case of a lodging-house for men, one of the greatest being that of ascertaining the exact status of the inmates. In conclusion we would congratulate both Lord Rowton and the tenants who take advantage of those privileges which have been through his liberality so generously and so cheaply placed at their disposal.

THE SMITHSONIAN INSTITUTION: HODGKINS FUND PRIZES.—Part of the income from the donation which was left to the Smithsonian Institution by Mr. T. G. Hodgkins of Setauket, New York, for the purpose of extending a more exact knowledge in regard to the nature and properties of atmospheric air in connexion with the welfare of man, is now offered for competition in a series of prizes ranging in value from $1000 to $10,000. The prizes are offered for the best essays on Atmospheric Air in its bearing on all the Sciences. The $10,000 prize will be given for a treatise embodying some new and important discovery in atmospheric air. A gold medal will also be instituted. Full particulars can be obtained from the secretary of the Smithsonian Institute, Washington, U.S.A.

REPORT OF THE LEPROSY COMMISSION IN INDIA, 1890-91.[1]

WE have been officially furnished with a copy of the long-expected report of the Commission on Leprosy which was sent to India by the Executive Committee of the National Leprosy Fund. It forms a handsome quarto volume of more than 450 pages and is illustrated with numerous maps and lithographs. The Commission arrived in India in November, 1890, and the report was signed on Aug. 21st, 1891, the English members of the Commission being Drs. Beaven Rake, George A. Buckmaster and Alfred A. Kanthack, and the members appointed by the Indian Government Surgeon-Major Arthur Barclay and Surgeon-Major Samuel J. Thomson, of the Bengal Medical Service. It may be remembered that Surgeon-Major Barclay died during the progress of the inquiry, and the volume opens appropriately with a graceful reference to him by his colleagues.

An introductory chapter gives a brief account of the establishment of the National Leprosy Fund, the appointment of the Commission and the method of its work. It was agreed to adopt the following procedure:—"The first aim of the Commissioners was to acquaint themselves with the features of the disease as it appears in the empire, directing their attention more to etiological factors than to purely clinical aspects. This could only be done by travelling from centre to centre and from asylum to asylum, and by personally inquiring into the histories of as large a number of lepers as possible. It was, therefore, decided to take full advantage of the cold season and to spend about five months in examining asylums and lepers in various localities. Subsequently the Commissioners were to assemble at some hill station in order to supplement their inquiries by pathological and bacteriological researches." This plan was faithfully carried out, numerous places were visited, over 2000 lepers were personally examined, and the bacteriological investigations were carried out at Simla.

Under the head of "General Remarks" the report is prefaced by a statistical statement of the relative numbers of examples of the various clinical forms of leprosy met with in each of the asylums or localities visited. These amounted to 1310 cases of the "anæsthetic" form, 284 of the "tubercular" and 719 of the "mixed" variety. The ages at which the disease makes its appearance and its duration are set forth in a table which gives the figures for each of the places visited. It shows that "most persons become lepers between the ages of twenty-six and thirty; the next most frequent time of onset was from twenty-one to twenty-five years of age, then from sixteen to twenty." These results accord with those of Vandyke Carter, with the exception that the Commissioners found about double the percentage assigned by that observer to those attacked before the age of ten years. Of 49 cases in which the disease commenced at five years and under, 28 were males and 21 females; and of 152 cases commencing at six to ten years, 95 were males and 56 females.

An important piece of work which the Commissioners undertook was to endeavour to estimate the value of census returns by recording in each place the negative and doubtful cases returned as being lepers. It was found that for all the places visited the percentage of "errors" was 5, and for localities having no leper asylum 9·5, so that if this proportion holds throughout India there would be a very considerable deduction from the estimated leper population.

The first chapter of the report consists of a diary of the Commission, from which and from the map thereto appended it is seen that the places visited embraced the greater part of the peninsula. Starting at Bombay and visiting asylums there and in the neighbourhood, the Commission proceeded to Poona, Belgaum, Hyderabad, Madras, Conjeeveram, Trichinopoly, Tanjore and Madura. At this stage the Commission divided into two parties—one proceeding to Burma, where Rangoon, Moulmein, Mandalay, Thayetmyo and Prome were visited; the other proceeding to Calicut, Nagpur, Jubbulpore, Allahabad, and meeting their colleagues at Calcutta at the end of January, 1891. From Calcutta one party proceeded to Purulia, Lucknow, Agra, Kangra, Dharmsala and Tarn Taran, arriving at Simla on April 8th. One of the other members joined the former at Agra after visiting Burdwan, Fyzabad and Ajodhya; whilst a third section visited Darjeeling, Gya, Benares, Cawnpore, Gwalior, Aligar, Delhi, Peshawar, Rawalpindi, Jummoo, Lahore, Mooltan, Patiala, Kapurthalla, Umballa and Almora, arriving at Simla on April 27th, where "the united Commission stayed until the completion of their inquiry, engaged chiefly in microscopical and bacteriological work."

The next chapter is devoted to notes of these various localities, which need not be summarised and hardly admit of being so treated.

GEOGRAPHICAL DISTRIBUTION.

It is pointed out that considerable difficulty obtains in arriving at a true estimate of the prevalence of leprosy from the imperfect manner in which the census returns are made up, and this is especially the case as regards the alleged increase of the disease. A comparison is instituted between the returns of the three censuses—1872, 1881 and 1891—to show the relative distribution of leprosy in the different presidencies and provinces. It is illustrated by three maps compiled after the leprosy map of Drs. Lewis and Cunningham, the proportionate amount of leprosy being indicated by various tints of colour. Of the three presidencies Madras presented the lowest ratio, and Bengal as a whole gave fewer than Bombay in 1872 and rather more in 1881. The census of 1891 showed a general decrease all over India, but the returns from the Central Provinces had to be omitted, as they were not available at the time of writing. Their omission does not, however, affect the general argument as to the possible increase or decrease of leprosy. It is interesting that these figures do not bear out the opinion held by Mr. Hutchinson that leprosy prevails most on the seaboard or along the course of large rivers; indeed, on an average the prevalence in such regions is much below that of the inland areas. It also appears that some hill tracts in the Himalayas yield a large proportion of cases. The conclusion is that "it cannot be said that the sea-coast, riparian areas, or large valleys are affected more than other districts in the country. The disease attacks all tracts impartially, and so far as the surface relations are concerned no generalisations whatever can be made. Similarly no connexion can be traced between the geological formations and the density or distribution of the leper population." After a critical study of the census returns the Commission think that the evidence they afford "excludes the idea of an increase of leprosy, and points rather to a gradual decrease at the present time; but it may be safer to assume that the diffusion of this disease has remained stationary." The returns show a steady decrease in Bombay and Madras presidencies, in the Punjab, N.W. Provinces, Lower Burma and Coorg, a general decrease in Bengal, and a slight increase in Mysore, but few districts show any steady increase during the last thirty years. The total leper population is estimated to be from 100,000 to 120,000.

CLIMATE AND LEPROSY.

No parts of India are free from leprosy, but its distribution is unequal, and the question whether there is any relation established between the dryness and heat of climate and the prevalence of leprosy is considered. In Madras, where the climate is dry, there is less leprosy than on the damper west coast, and in Sind and the south-west Punjab, which are very dry, the ratio of lepers to the healthy population is lower than in any other part of India. A comparison of the leper maps with the weather chart shows that there is no relation between the mean annual temperature and leprosy. The relatively larger number of lepers in places of greater humidity is apparent in each of the census returns.

HEALTH OF POPULATION AND LEPROSY.

So far as can be gathered from the census returns of rate of increase or decrease of population and the rate of mortality as an indication of comparative healthiness, it was apparent that no correspondence existed between the amount of leprosy in a district and its general low health rate. Special attention is given to certain other indications of healthiness and sanitary state, the first dealt with being cholera. In the Burdwan division is to be found the highest relative number of lepers, and leprosy is generally prevalent over Lower and Eastern Bengal and Burma, all of these districts being places where cholera and fever abound. Without attempting to generalise too dogmatically on this point, the Commissioners show that "in those regions and areas in which cholera is worst and endemic the leper diffusion is also

[1] Leprosy in India. Report of the Leprosy Commission in India, 1890-91. Calcutta: Printed by the Superintendent of Government Printing, India. 1892.

greatest." The conditions underlying the prevalence of cholera, including climate, poverty and overcrowding, are favourable to bad hygiene and diminished resistance against infective processes. It is not, however, meant to imply any causal connexion between leprosy and cholera. Again, as to the effect of famine in reducing the leper ratio, it is pointed out that the census returns afford no reliable information and it is quite legitimate to attribute the apparent decrease in leprosy at the last census to the improved condition of the people and the absence of any widespread famine since 1876. They deal also with the influence of poverty, and express the belief that "with the furtherance of prosperity, education and hygiene, and, in fact, with a substitution of a standard of maintenance for that of subsistence, leprosy will materially decrease in India as it has done in Europe."

LEPROSY AN ENDEMIC DISEASE.

Leprosy, being an infectious disease, depends not only upon a specific virus, but on individual disposition, and it is likely to be endemic where those factors exist which contribute to this individual susceptibility. There are facts to show how, by varying the external conditions or the diet of animals, they may be rendered susceptible or refractory to certain contagia. There are districts in India where leprosy has been fairly constant in its prevalence—districts which agree in the existence of poverty, insanitary conditions, overpopulation, unhealthy or moist climate—and it may well be that these furnish the necessary second factor of individual disposition, combined with the presence of the leprosy bacillus in a resting stage, which is probably widely distributed. A comparison is made with tuberculosis and its decrease with improved sanitation as affording hope for an equally gratifying diminution in leprosy with improved hygiene.

It is shown that there is no relation between the density of population—in India by no means an index of material prosperity—and leprosy, and as regards *racial predisposition* the conclusion is arrived at that *per se* no one race is more liable to contract leprosy than another when subjected to equally favourable conditions. Europeans would suffer equally with natives were the conditions of life the same. An examination of the various *religious bodies* leads to a similar conclusion, the comparative immunity of Sikhs, Jains and Parsis being explained by their higher social standing or superior physique. That "an abstinence from animal food by no means prevents a diffusion of leprosy is well illustrated by the Kahirpanthis. Amongst the Buddhists and Nats much leprosy is found, but it is well known that the social and personal conditions of the Burmans are low and in many parts deplorable." Statistics are given to show the influence of caste, the ratio among the wealthy or rich castes being less than 1 per 10,000, and in the poorer castes 3·05 per 10,000. This is in harmony with what is shown above as regards poverty.

ASYLUMS AND THE DISTRIBUTION OF LEPROSY.

It is proved by the three census returns that leprosy shows no tendency to increase in districts where asylums are situated whose inmates are annually increasing, but distinctly the reverse, a result which cannot be attributed to segregation since that is not enforced. The fact that the numbers seeking relief in the asylums is evidence of an increase in the disease is clearly shown to be fallacious, but only evidence of an ampler recognition of the benefits of such institutions by the sufferers; and the presence of an asylum in a district often attracts greater numbers of lepers from neighbouring regions. "This applies especially to such localities as border on native or feudatory States. ..... The lepers finding more congenial conditions under the British rule leave their own State." Hence one cause of greater leper density in a district may be this immigration of asylum inmates from outlying regions.

LEPROSY AND VACCINATION.

The task of refuting the charge against vaccination as having been the means of causing an increase in leprosy was not a difficult one, but it is seriously taken up and shown to be baseless. Vaccination is as yet comparatively limited in India, but it is increasing, whilst leprosy is decreasing. Leprosy is not a disease which can, like syphilis, be easily and with certainty transmitted by a single inoculation. Leprosy is "certainly not found as often as in 1 out of 100,000 cases at an infantile period," and the error of using lymph from a leprous child must occur extremely seldom. Moreover the use of animal lymph is largely in vogue, and it has to be shown that leprosy has increased in those parts where human lymph is employed. The Commissioners are fully justified in stating that "until a series of positive cases, free from doubt and objection, can be demonstrated, the statement that leprosy is diffused by vaccination must be regarded as devoid of scientific value."

THE ALLEGED INCREASE OF LEPROSY.

The chapter on the Distribution of Leprosy in India, which we have summarised above, concludes with some remarks of which the following are given great prominence: "From the consideration of the leper distribution according to the three censuses it is evident that the alarm about the increase of leprosy in British India is altogether groundless; in fact that the figures available, unfortunately consisting only of three sets, point strongly to a decrease amongst these unfortunate people, in any case to the disease being at a standstill. Again the number of lepers has been greatly overstated, 110,000 being perhaps nearest the truth. Leprosy cannot, therefore, be regarded in the light of an 'Imperial danger.'" A detailed appendix is given showing the distribution of leprosy in the various provinces according to the three census returns.

HEREDITARY TRANSMISSION AND PREDISPOSITION.

The lack of a clear distinction between "hereditary transmission" and "inherited predisposition" accounts, the Commissioners think, to a certain extent for discrepant views upon leprosy in this connexion. Further, there is often neglect to inquire into the fact whether the parent or parents were diseased at the time of the child's birth or not until later. They are, however, enabled to affirm from the evidence obtained and by an examination of over 2000 cases that "leprosy in India cannot be considered an hereditary disease, and they would even venture to say that the evidence which exists is hardly sufficient to establish an inherited specific predisposition to the disease by the offspring of leprous parents to any appreciable degree." Tuberculosis is again taken as an example of a disease which most resembles leprosy in this respect. The matter is very fully sifted in the chapter devoted to its consideration, but we can only refer to a few salient points:—1. No case of congenital leprosy was seen. 2. Hereditary taint in the direct line could only be traced in 130 out of 2,731 cases, or in 5·48 per cent., but in 74 of these there is no statement of the parents' condition at the time of the child's birth or there is doubt as to the diagnosis. On the whole, not more than 4 per cent. can be accepted, a ratio of family taint which is well within explanation by subjection to similar conditions. In only 18 cases was there evidence of the taint in more than one generation, and in 5 of these the parents were healthy and in 6 the conditions were such as to exclude an inherited specific predisposition. 3. The occurrence of leprosy in several members of a family, especially when the parents are healthy, proves nothing but liability from being exposed to like conditions. 4. Of the children born of leprous parents only a very small number become leprous, thus 98 leprous couples had 65 children and of these 3 became lepers. 5. Of 23 inmates of the Almora Orphanage, children of leprous parents, 3 were born before the disease was manifested in their parents and 5 were under ten years of age, whilst of the remaining 15 only 1 has contracted the disease. 6. Amongst 500 children born of two leprous parents, or from one leper parent and one healthy parent, 21, or 4·2 per cent., became lepers, or 6·6 per cent. if ten years of age be taken as the minimum, and 7·31 per cent. with sixteen years as the minimum. 7. It is remarkable in families where the children are lepers a larger proportion occurs where the parents did not develop the disease until after the birth of these children than where the parents were tainted at the time of the births. There is a family tendency rather than an inherited one. 8. The diminished procreative power of lepers and the comparatively high mortality amongst their offspring are dealt with. It is inferred from facts as to the marriages of lepers with healthy people or amongst themselves that the risk of diffusion of the disease by means of the offspring is not increased, owing largely to the relative sterility of lepers. The general conclusion is that "the specific hereditary predisposition to leprosy is but slight and practically does not exist," and also that "allowing the fullest influence to heredity, there appears to be no risk of an increase to the leper population of India, so far as the disease is dependent on heredity for its multiplication, and that marriages with or intermarriages between lepers cannot be regarded in the light of a danger to the community."

CONTAGIOUSNESS OF LEPROSY.

At the outset of the chapter dealing with the vexed question of contagiousness it is pointed out that because a disease depends on a pathogenic germ it does not follow that it is contagious, and malaria and pneumonia are instanced as examples of infective non-contagious disease. Flügge's dictum that the diffusion of leprosy by contagion is exceedingly rare and can only take place under special and predisposing favourable conditions condenses much of the argument contained in the report. Surprise is expressed at Hansen's contagionist attitude in view of the fact, that he himself records, of the disease dying out amongst the Norwegian leper emigrants in America. The Commission emphasise the necessity of separating the "abstract and scientific meaning of the term 'contagion' from the practical one," and boldly declare that the actual question of contagion is not to be settled by bacteriological and laboratory experiment. They point out that great differences in point of contagiousness exist amongst the infective diseases, and they regret the tendency of modern research to disregard clinical and epidemiological experience in this matter. The transmission of tuberculosis is largely, if not wholly, governed by the disposition of the individual exposed to infection. From the evidence before them the Commission conclude that "though they consider leprosy an infective disease, caused by a specific bacillus, and moreover also a contagious disease, they are of opinion that there is not sufficient evidence that leprosy is maintained or diffused by contagion; indeed, under the ordinary human surroundings the amount of contagion which exists is so small that it may be disregarded, and no legislation is called for on the lines either of segregation or of interdiction of marriages with lepers." All the instances of alleged contagion brought under their notice broke down (with one possible exception); in no single case could contagion or the possibility of contagion be actually demonstrated in a manner free from objection; the assumed contagion in family leprosy could only be traced in 5 per cent.; it is very rare for a wife to be infected by her husband or *vice versâ*; there is no evidence that vaccination diffuses the disease, and "the instances quoted in literature of leprosy being 'vaccinated' on to a healthy child are too equivocal and ambiguous to carry much weight." This and other evidence of the absence of communicability amongst those living and mingling with leper communities are adduced as arguments in support of the above important conclusion. Once more the comparison with tuberculosis is held to be the keystone to the interpretation of leprosy.

SANITATION, DIET AND DISEASE.

Attention is paid to other possible factors in the etiology of leprosy, which we can barely mention here. Nothing material is to be made out as to the influence of sanitation, or rather the want of it, in producing the disease. The question of diet is of chief interest in relation to Mr. Hutchinson's theory of the influence of a fish diet, which is inquired into by the Commission, with the result that they have "no doubt that the consumption of fish is not the cause of leprosy." Nor do they find any support to the opinion that the want of salt is responsible for the origin and maintenance of the disease. They also inquired into the supposed influence of antecedent syphilis, and find it has no influence beyond the general one of lowering vital resistance. "It is probable," they say, "that bad hygienic surroundings, deficient or improper food, poverty, exposure, and such diseases as syphilis are all factors of great importance in reducing the vital powers of the organism and rendering it more susceptible to attack."

The Treatment of Leprosy is next considered and the results of various medicinal agents as well as of trials of tuberculin are discussed.

CONCLUSIONS.

"1. Leprosy is a disease *sui generis*; it is not a form of syphilis or tuberculosis, but has striking etiological analogies with the latter.

"2. Leprosy is not diffused by hereditary transmission, and for this reason and the established amount of sterility amongst lepers the disease has a natural tendency to die out.

"3. Though in a scientific classification of diseases leprosy must be regarded as contagious and also inoculable, yet the extent to which it is propagated by these means is exceedingly small.

"4. Leprosy is not directly originated by the use of any particular article of food, nor by any climatic or telluric conditions, nor by insanitary surroundings, neither does it peculiarly affect any race or caste.

"5 Leprosy is indirectly influenced by insanitary surroundings, such as poverty, bad food or deficient drainage or ventilation, for these, by causing a predisposition, increase the susceptibility of the individuals to the disease.

"6. Leprosy, in the great majority of cases, originates *de novo*—that is, from a sequence or concurrence of causes and conditions, dealt with in the report, and which are related to each other in ways at present imperfectly known."

These Conclusions are followed by some "practical suggestions," which amount to a declaration against segregation or compulsory isolation, but which favour the extension of retreats for voluntary isolation, with as little curtailment of personal freedom as possible, the permission of marriage amongst lepers and the formation of leper colonies.

An appendix contains details of the bacteriological and experimental work carried out by members of the Commission at Almora and Simla.

MEMORANDUM ON THE REPORT BY THE EXECUTIVE COMMITTEE.

The following are the main points of the Memorandum on the report of the Leprosy Commissioners, as prepared by a Special Committee appointed for the purpose, and endorsed or annotated by members of the Executive Committee:—

The Committee, having been instructed to consider and report upon the publication of the report of the Leprosy Commissioners in India in 1890-91, beg to submit the following considerations: The Committee desire to place on record their sense of the ability with which the Commissioners conducted their investigations whilst in India and of the comprehensive and valuable nature of their report. After specifying the conclusions of the Commissioners (which we give in the above abstract of the report), the Committee, in reference to the suggested regulation of lepers and leprosy by means of by-laws framed by the various municipalities, write as follows:—

(*a*) The Commission are of opinion that the sale of articles of food and drink by lepers should be prohibited and that they should be prevented from practising prostitution and from following such occupations as the case of barber and washerman, which concern the food, drink and clothing of the people generally, quite apart from the dread of a possible infection.

(*b*) The Commission consider that the best policy in dealing with the concentration of lepers in towns and cities is to discourage it and to this end would suggest that municipal authorities be empowered to pass by-laws preventing vagrants suffering from leprosy from begging in or frequenting places of public resort, or using public conveyances.

(*c*) The large Presidency towns and the capitals of provinces in many cases already possess leper asylums, which might be enlarged by municipal funds or private subscriptions. Asylums should be built near towns where they do not already exist, and the authorities should have the power of ordering lepers infringing the regulations either to return to their homes or to enter an asylum.

(*d*) Competent medical authority should always be consulted before action is taken under such by-laws.

The Committee accept Nos. 1, 2, 4 and 5 of the conclusions of the Commission; but not being satisfied with the evidence offered by the Commissioners they express their disagreement with the concluding words of No. 3, viz:

"That the extent to which leprosy is propagated by contagion and inoculation is exceedingly small."

They cannot concur in the views expressed in No. 6—namely, that

Leprosy in the majority of cases originates *de novo*—that is, from a sequence or concurrence of causes and conditions, dealt with in the report, and which are related to each other in ways at present imperfectly known,—

being of opinion that the evidence adduced in the report does not justify such conclusions.

The Commissioners have expressed opinions strongly adverse to compulsory segregation, either complete or partial. They say:—

No legislation is called for on the lines either of segregation or of interdiction of marriages with lepers.

For India complete compulsory segregation may be considered to be absolutely impracticable. Neither on the conclusions given before as to the nature of the disease justify any recommendation for absolute segregation.

It is impossible for the same reasons to advise compulsory partial isolation. Voluntary isolation is therefore the only measure left for consideration.

In no case would the Commissioners suggest an Imperial Act especially directed against lepers as such.

In conclusion, the Commissioners believe, from the considerations and arguments adduced in the foregoing report, that neither compulsory nor voluntary segregation would at present effectually stamp out the disease, or even markedly diminish the leper population, under the existing conditions of life in India.

The Committee, having expressed their inability to accept the reasoning upon which the Commissioners have based the above conclusions, state that they are equally unable to accept the

corollary that segregation in any case of leprosy in India is either impracticable or undesirable. They entertain a precisely opposite opinion and would be sorry if the Government of India were encouraged by the report of the Commissioners to refrain from taking the necessary steps in the direction of such segregation of lepers as may be found possible. Their opinions upon segregation are in accord with those expressed in the following extract from a memorandum by Dr. Vandyke Carter :—

MODES OF SEGREGATION.

I. "By erecting plain asylums at certain centres, each of which would be a refuge common to several districts and a place of detention under due management and supervision."

II. "By founding leper colonies or village communities mainly of the affected, who, whilst allowed more liberty of movement, should yet be prevented from mingling with the peasantry around; hence still the need of strict supervision. Many spots would thus serve—such as deserted forts, decayed villages and places now waste, yet not far from other sources of supply, or not without near resources easily resuscitated."

III. "By requiring the strict isolation of leprous subjects retained in their homes at express wish of friends. Suitable separate lodgement would be indispensable; unsuitable shelter is even now sometimes supplied. Joining of such home-isolation with more public measures should not be overlooked, for to it experience in Norway seems to point as a means essential to complete success within a moderate period of time; and in India it would have to be still more largely resorted to.

IV. "For carrying out the above, in addition to funds, legislative authority is needed to take up the vagrant sick, to remove the sorely diseased who is insufficiently guarded at home, and at times to enforce continued isolation of the infected until medical sanction of liberty be granted."

The Committee give a general approval to the minor recommendations of the Commissioners, numbered above as (*a*) (*b*) (*c*) (*d*), for the regulation of lepers and leprosy in India, which they consider might with advantage be carried out, though they do not concur in the opinion that municipalities would be necessarily or universally the best means of effecting that object.

The Memorandum is signed by—

Nominated by the Executive Committee of the National Leprosy Fund.	GEORGE N. CURZON (Under Secretary for India), Chairman. EDWARD CLIFFORD.
Nominated by the Royal College of Physicians.	*DYCE DUCKWORTH, M.D., LL.D. G. A. HERON, M.D., F.R.C.P.
Nominated by the Royal College of Surgeons.	*JONATHAN HUTCHINSON, LL.D., F.R.S. N. C. MACNAMARA, F.R.C.S.

[The above were the members of the Special Committee.]

Chairman of the Executive Committee.	FERDINAND ROTHSCHILD.
Members of the Executive Committee.	F. LONDIN. *ANDREW CLARK, M.D., F.R.C.P. *JAMES PAGET. *J. FAYRER. *W. GUYER HUNTER. *JONATHAN HUTCHINSON. E. CLIFFORD. ALGERNON BORTHWICK and EDWARD LAWSON, Honorary Treasurers.

* These members have signed a further memorandum, which is given below.

INDEPENDENT OR DISSENTIENT OPINIONS.

The following independent or dissentient opinions have been expressed by members of the Special Committee and of the Executive Committee :—

"'*Leprosy is not diffused by hereditary transmission.*' I do not think that this is proven."—J. FAYRER.

"'*Contagious and also inoculable.*' This is also uncertain."—J. FAYRER.

"I understand the Commissioners to mean by the expression *de novo* in reference to the origin of leprosy that they believe that the disease may begin independently of personal contagion and in connexion with climatic and dietetic causes. In that belief I entirely share. I also agree in the main with the rest of the statements in the Commissioners' report, to which exception has been taken in our committee. I feel convinced that if leprosy be contagious at all it depends but to an almost infinitesimal extent upon contagion for its spread."—JONATHAN HUTCHINSON, LL.D., F.R.S.

"I am in agreement generally with the recommendations of the Commission respecting *voluntary isolation* and the issue of *Municipal By-laws* regulating the habits of lepers. I know no trustworthy evidence to prove that a leper in any community is a source of greater danger than is a consumptive patient, and I know that a person suffering from syphilis is a real and very positive source of danger anywhere. It would therefore be absurd on the face of it to adopt stringent laws for the leper and to let the syphilitic person go free.

"The intelligent layman now imagines that, because bacilli are an essential feature of leprosy, therefore the disease *must* be readily contagious. This is simply quite contrary to fact. The same thing holds good exactly for consumption and for some other disorders in which microbes play a part.

"I think a well-empowered and vigorously supported Government medical executive officer should be appointed in every large town and in certain districts to supervise the leprous populations and report regularly upon them. It should be his business to see that the local regulations are fully carried out, and on his requisition only should any action be taken when necessary.

"Suitable asylums should be provided and those now existing should be sufficiently enlarged to meet the needs that will arise under suitable by-laws.

"The project of leper-farms is, I think, a good one. More than this is, I believe, not within any practical scheme for amending the condition of lepers and for diminishing the spread of the malady."—DYCE DUCKWORTH, M.D., LL.D.

"I am strongly in favour of the maintainance (by Government or otherwise) of voluntary homes for lepers, but do not believe that segregation would effect anything in diminishing the prevalence of the disease. Compulsory segregation would, I think, involve injustice and entail much social misery. I believe that our Commissioners' report well expresses not alone the opinions of those who have signed it, but, in a general way, those of the educated classes of the present day throughout India."—JONATHAN HUTCHINSON, LL.D., F.R.S.

"I think the report a most valuable and excellent one, agreeing generally with the remarks of the Committee. I concur in the objections made by Sir Dyce Duckworth and Mr. Hutchinson. I have also noted two remarks which I do not consider can be accepted as proven.

"But on the whole I regard the report as most excellent, and, if the recommendations are acted on, one which will prove of the greatest benefit to the population of India. When leprosy disappears, it will do so as a result of improved hygienic and social conditions.

"In the meantime all that is possible—as suggested in the report—to be done should be done to ameliorate the condition of the sufferers, and I am glad to find that coercive measures of segregation or wild fear of contagion are not contemplated."—J. FAYRER.

FURTHER MEMORANDUM.

"We, the undersigned members of the Executive Committee of the National Leprosy Fund, desire to express our approval of the Commissioners' report, which we regard as a very careful record of well observed important facts. We concur with their suggestions of 'the practical measures to be taken for the control or the restriction of the disease in India.' We dissent from the opinion expressed in the body of the report of the Special Committee on the subject of the contagion of leprosy and from the recommendations founded on that opinion. We believe that the evidence of the spread of leprosy by contagion is not sufficient to justify the compulsory segregation of lepers, though the institution of homes in which they may voluntarily reside may be very earnestly advised. And we are of opinion that, although an unusual susceptibility of leprosy may be transmitted by inheritance, and the children of lepers may be more than others liable to the disease if living in the conditions in which it generally occurs, this does not supply reason sufficient for prohibiting the marriage of the leprous.

"ANDREW CLARK, M.D., F.R.C.P.
W. GUYER HUNTER.
JAMES PAGET.
J. FAYRER.
JONATHAN HUTCHINSON."

The report will, as we announced last week, be published simultaneously in England and in India on Monday next, May 1st. We propose to deal more fully next week with the bacteriological aspect of the subject as presented by the Commissioners.

FOOD-SUPPLY FOR THE NANSEN EXPEDITION.

JUST before the Easter recess the Bovril Company invited a large number of distinguished persons to visit their works in order to inspect the various preparations of concentrated foods they prepare. These are useful to at least three classes of the community—those who have but little time at their disposal for the dressing and preparation of their food, and who are glad of any means by which they can economise their time and apply it to the performance of other duties; those who, living in remote districts far from shops and markets,—such as travellers and explorers in unknown or uninhabited countries, and soldiers on a line of march at a distance from the base of their supplies—desire to carry with them the means of sustenance for some days or weeks in a compact and portable form; and lastly, those who from any circumstance, but especially from disease, are debarred from taking the food they require in the usual form and compelled to have the necessary quantity in as concentrated a condition as possible and freed from all

extraneous and indigestible material. It has been the object of the company to fulfil the requirements of these three classes and to supply a variety of solid foods which, by the mere addition of a little hot water, can be converted into a wholesome and palatable soup in the space of a few minutes, which, in addition, contains a large quantity of highly nutritious material in a small bulk, and, above all, which contains the essential elements of our ordinary food in the proportions which experience has shown to be most serviceable for the support of the body under circumstances of exposure to cold and fatigue.

The chief mode of preserving animal food, whether fish or flesh, from time immemorial has been the application of salt, and even now such salted food—often, from the carelessness of the ships' stewards, more or less tainted—is served out to our sailors or is consumed by even the better classes in the form of salted herrings and pilchards, whilst a relic of the past is retained in the salt fish that appears on the table on Ash Wednesday. Curing, as it is termed, by smoking or by the application of carbolic acid, is still practised in the case of hams, salmon and herrings. Immersion in oil is rarely employed, and then only in the case of fish. Of late years the increase of population in the western countries and the impossibility of obtaining the necessary supplies for their sustenance, by rendering it imperative to obtain such supplies from distant sources, have led to the adoption on a large scale of three methods of preserving food. The first of these methods is the exclusion of air and of germs by the tinning or canning process; the second, preservation by exposure to cold at or near the melting point of ice; and, lastly, the method by desiccation. The method adopted by the Bovril Company is essentially that of desiccation, which, if performed at a relatively low temperature, retains in the dried material all the carbon and nitrogen; whilst it reduces the weight to the extent of, in some instances, 70 per cent. or even more.

The average healthy, moderately active man requires, to cover his losses of nitrogen and of carbon occasioned by the katabolism of albumen and fat in the body, about 18 grammes of nitrogen and 270 grammes of carbon—that is to say, about 110 grammes of dry albumen and 207 grammes of carbon in fats and carbohydrates. Yet much more than this must be ingested, since only that portion which is digested and absorbed is of service in supplying the place of that which is disintegrated in the body, and no food undergoes complete absorption, not even such typical foods as meat, eggs and milk, the albumen leaving an undigested and unabsorbed residue amounting to from 1 to 3 per cent., whilst in white bread 9 per cent., in legumes 17 per cent. and in black bread and potatoes 30 per cent. of the proteids are eliminated from the body without having undergone absorption. The carbohydrates, on the other hand, are nearly completely digested in the intestines of man, in the case of the cereals and legumes only about 3 per cent. being undigested, in potatoes about 8 per cent., and in black bread about 10 per cent. The fats are usually absorbed to the extent of 95 per cent. The quantity and the quality of the food required by a healthy man vary, of course, with the weight, age, occupation, and particularly with the amount of work done. We subjoin the diets of different bodies of men, compiled from the most recent official sources, as given by Munk and Uffelmann, and it may be remarked that the enormous supplies of food requisite for the support of the great armies of the continental nations have led to the most careful investigation into the most effective food which can be given to the soldier at the cheapest rate, running it so close that a marked difference is made in the rations supplied in peace and in active service, and in the former case whether work is required to be done or not.

The Ration of the German Soldier.

	Peace Footing.		War Footing.	
	Small.* Grammes.	Large.† Grammes.	Small. Grammes.	Large. Grammes.
Bread	750	750	750	750
Biscuit	—	—	500	—
Meat	150	250	375	500
Smoked meat, or	—	—	250	—
Fat	—	—	170	—
Rice, or	50	120	125	170
Barley groats	120	180	125	170
Legumes	230	200	230	340
Potatoes	1500	2000	—	2000
Salt	—	25	—	25
Roasted coffee	—	15	—	25
Brandy	—	—	—	0·1‡

* Given in time of peace. † Given during manœuvres. ‡ Litre.

Ration of Austrian Soldier.

In Peace.	Grammes.	In War.	Grammes.
Bread	875	Bread	879
Meat	187	Biscuit	500
Fat	17·5	Beef	300
Flour	70	Pork	450
Legumes	70	Smoked meat	250
Groats	140	Preserved meat	250
Potatoes	560	Bacon fat	150
Rice	105	Rice	140
Sauerkraut	357	Sauerkraut	280
		Potatoes	1000
		Wine	0·36
		Beer	0·72
		Rum	0·06
		Brandy	0·09
		Tobacco	35

* Either of these. † Litres.

This diet is a little fuller and more varied than that in the German army.

Ration of French Soldier.

In Peace.	Grammes.	In War.	Grammes.
Bread	1000	Bread	1000
Meat	300	Biscuit	750
Vegetables (fresh)	100	Meat	300
,, (desiccated)	30	Vegetables (dried)	60
		Sugar	25–32

Ration of English Soldier.

	Grammes.		Grammes.
Bread	680	Sugar	37·7
Meat	340	Coffee	9·4
Potatoes	453	Tea	4·6
Vegetables	226	Salt	7·0
Milk	92		

The form in which the food is supplied is of no small importance. It must be pleasant to the respective senses of taste and smell, though occasionally, as in certain fruits and in "high" game, these may be antagonistic. In ordinary cookery the spicing of the food effected by means of salt, pepper, vegetable acids and condiments generally is practised to render it palatable, and, as Munk and Uffelmann remark, is greatly neglected in the food of poor-houses, unions and almshouses, where, however, the same food is to be taken continuously for many days. The flavour must not be too pronounced or it soon becomes nauseous. It will be seen from the tables that in the emergency food or pemmican and in the three forms of special food the Bovril Company have provided variations in the composition of food which should prevent nausea.

Again, the consistence of the food is a point to which attention must be directed. It is of little use to introduce into the stomach highly concentrated food unless its form is such that it can be digested. Animal food, indeed, requires but little preparation, as is shown by the perfect preservation of health of the Gauchos, who eat raw meat; but as a rule meat undergoes some process of cooking, either by seething or boiling or by roasting, the seething, as Liebig pointed out, being performed when soups containing the extracts of the meat, organic salts, soluble proteids and extractives are desired, whilst in boiling and in roasting the juices are for the most part retained. Keller has shown that after long boiling meat parts with most of the salts—that is to say, three-fifths of the phosphoric acid, seven-eighths of its potash, one-fifth of the earthy salts and the whole of the sodium chloride. Through the courtesy of Mr. Johnston we have had the opportunity of tasting the different preparations manufactured by the Bovril Company, and he has supplied us with the following tables. The several preparations differ considerably in their composition, dietetic value, consistence, aspect and flavour. Some of these foods—as the concentrated bovril—require no comment on our part, except that on trial we found that a teaspoonful made a cup of excellent soup, requiring no addition of any kind, and two lads who rowed up the Thames with a small jar of it declared that a similar quantity taken in lieu of lunch enabled them to do their work without fatigue. The blocks of Bovril emergency food, and those intended to be used by Captain Nansen in his approaching Arctic expedition, are brown, friable masses, varying from a quarter of an inch to half an inch in thickness, and are of an agreeable flavour, leaving a pleasant after-taste on the palate. The composition of four kinds of these blocks is given in the following table. It will be seen that in all there is an admixture of animal and vegetable constituents, the proportions of which have been the subject of much consideration. In all, dried beef is the staple supplying the main

STANDARDS FOR DAILY DIETARIES AND ACTUAL DIETARIES OF PEOPLE OF DIFFERENT CLASSES.

WEIGHTS OF NUTRIENTS AND CALORIES OF ENERGY IN NUTRIENTS IN FOOD PER DAY.

A. *Protein.* Lean of meat, casein of milk, white of eggs, gluten of wheat &c.

B. *Fats.* Fatty and oily matters.

C. *Carbohydrates.* Sugar, starch &c.

D. *Potential Energy.* Fuel value.

proteid contingent; the addition of fat and oatmeal contributes the carbon and hydrogen required in the form of carbohydrates and hydrocarbons; whilst different substances are added to give variety of flavour as well as to add to its dietetic value. The relative value of these preparations, as compared with ordinary articles of diet—as, for example, the No. 3 arctic expedition food with that of eggs—may be seen by comparing the numbers in the last column.

Estimated Analysis.—Arctic Expedition Foods.

Article.	Water.	Ash (phosphates &c.)	Carbohydrates.	Fat.	Nitrogenous principles.	Potential energy per 100 grains.	Potential energy per lb.	Composition.
Pemmican or emergency food	Per cent. 0·82	Per cent. 2·18	Per cent. —	Per cent. 52·00	Per cent. 45·00	Calories. 668	Calories. 3033	A mixture of perfectly dry beef powder and vegetable fat, suitably seasoned.
Special foods, No. 1.	2·23	3·17	29·07	34·46	31·07	567	2574	Dried beef, potatoes and vegetables mixed with vegetable and animal butter.
Special foods, No. 2.	0·5	2·0	46·4	26·6	14·5	589	2674	Dried barley, potatoes and beef mixed with ham fat and seasoned.
Special foods, No. 3.	1·76	1·29	18·7	48·25	30·0	648	2943	Dried beef, oatmeal and anchovies mixed with butter and vegetable fat.

Percentages of Nutrients (Nutritive Ingredients), Water &c., and Estimated Potential Energy (Fuel Value) in specimens of Food Materials.

Food materials.	Refuse (bones, skin, shells &c.).	Edible portion.						Calories of potential energy in one pound of each material.
		Water.	Nutrients.					
			Total.	Protein.	Fats.	Carbo-hydrates.	Mineral matters.	
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	
Animal foods as purchased, including edible portion and refuse :—								
Beef, round	10·0	60·0	30·0	20·7	8·1	—	1·2	725
Beef, sirloin	25·0	45·0	30·0	15·0	14·3	—	0·7	885
Mutton, leg	18·4	50·4	31·2	15·0	15·5	—	0·7	935
Mutton, loin (chops)	16·8	41·3	42·4	12·5	29·3	—	0·6	1470
Pork, very fat	10·4	9·5	80·1	2·8	76·5	—	0·8	3290
Chicken	41·6	42·2	16·2	14·2	1·2	—	0·8	315
Salmon, whole	25·3	40·8	34·1	14·3	8·4	—	1·0	635
Hens' eggs	13·7	63·1	23·2	11·8	10·2	0·4	0·8	655
Bovril emergency food :—								
Composition: A mixture of perfectly dry beef powder and vegetable fat, suitably flavoured	—	0·82	99·18	45·00	52·0	—	2·18	3033
Arctic expedition foods, prepared by Bovril, Limited, for Dr. Nansen—No. 1 :—								
Composition: Dried beef, potatoes and vegetables, mixed with vegetable and animal butter	—	2·23	97·77	31·07	34·46	29·67	3·17	2574
Do. do. No. 2 :—								
Composition: Dried barley, potatoes and beef, mixed with ham fat and seasoned	—	0·5	99·5	14·5	35·6	46·4	2·0	2674
Do. do. No. 3 :—								
Composition: Dried beef, oatmeal and anchovies, mixed with butter and vegetable fat	—	1·76	98·24	30·0	48·75	18·7	1·29	2943

CHOLERA.

THERE is but little intelligence to record this week, we are glad to say, regarding the progress of cholera, for bad news is a proverbially fast traveller, especially in these days of telegraphs. It is satisfactory to learn from *The Times* correspondent at St. Petersburg that the persistent rumours as to the occurrence of a large number of cases of cholera in that city are unfounded. The Medical Department of the Ministry of the Interior states in the official Gazette that no cases of real cholera have occurred in the capital since the end of last year, and that the comparatively few cases of suspected cholera that have been treated in the hospitals during the present month have not proved, on bacteriological investigation, to be true cholera. As regards other parts of Russia there have been 64 fresh seizures and 26 deaths from cholera between April 8th and 15th in the provinces of Orel, Saratoff, Ufa, Elizabetopol and the Don. The large majority were in Ufa—namely, 51 cases and 21 deaths. The cold in Southern Russia is described as being still nearly that of midwinter. The Persian Vice-Consul at Baku announces that there is no cholera in Persia at present. This is not surprising, for a cholera epidemic rarely, if ever, retrogrades or travels backwards. M. Haffkine gave an account of his experiments in the Calcutta Medical College on March 24th last, with demonstrations of the modern method of inoculating an attenuated cholera virus as a protective against that disease. The principal of the College, Surgeon-Lieutenant-Colonel G. Bomford, M.D., introduced M. Haffkine to an audience composed of a large number of the profession in that city. M. Haffkine proposes to remain some ten months in India, but to what extent Government will allow him to apply his method in the Indian gaols and elsewhere is still under consideration. Meanwhile the *Times of India* says there would appear to be no lack of voluntary subjects. M. Haffkine has been cordially received by the medical profession in India, who manifest a great interest in his work, and he is trusting a good deal to their aid in applying his method in such manner as they may think most useful. His task is to introduce the method so that its preventive effect may be distinctly recognised, and as cholera epidemics are somewhat regular in that country it is hoped that it can be applied at some place where cholera recurs at regular intervals and the results can be observed and registered.

CHOLERA IN FRANCE.

(FROM OUR SPECIAL CORRESPONDENT.)

THE MARSEILLES WATER-SUPPLY.

British Shipping Interests and the Marseilles Water.—Two Thousand Five Hundred Years of Soil Pollution.—The Waters of the Durance.—Muddy Water.—The Huveanne.—Cholera following the Water-supply.

THE dangerous, indeed the barbaric, condition of domestic drainage still prevailing at Marseilles has been fully described; I have also explained how the drinking water in many instances is exposed to contamination by the connexion established between the water cisterns and the household drains. But in more than half the houses there are no drains; nevertheless, even in such dwellings the supply is not safe. The water of Marseilles is doubly menaced; it is often contaminated before it reaches the town, and it has been seen that it may be still further contaminated when stored in the cisterns of the private houses. Nevertheless, the town of Marseilles is to be congratulated on the great work it has achieved in respect to water-supply and on the very abundant provision of water it has secured. Dr. P. David (Pharmacien-Major de 1re Classe au XV Corps d'Armée) has presented to the Industrial and Scientific Society of Marseilles a very elaborate study on the various water-supplies of the town. This work deserves to be widely circulated. I need make no apology for briefly submitting some of the facts of the case. The water-supply of Marseilles is a matter of international importance, for a large number of ships of all nations stop at Marseilles and take this water on board. After the French themselves none are more interested in the Marseilles water-supply than the English. Something like 800 British ships enter the port every year. All these ships have to take on board the Marseilles water. Apart from this, there is an ever increasing number of English passengers who travel to the East—to India, China and Australia—on the magnificent ships of the Messageries Maritimes company. On board these French ships English passengers meet with civility and attention, and the cost of the journey is comparatively cheap because wine is included in the meals without extra charge. Then there are the steamers of the Transatlantic Company that also convey yearly an increasing number of English people who select to winter in Algeria or who desire to visit Tunis. Finally there are many English passenger ships that call at Marseilles on their way to and from the East. In every

one of these cases it is the Marseilles water that is put on board, and this water is still drunk by travellers when they are many hundred miles away from Marseilles. Some account therefore of the water supply of the town will not be out of place.

In dealing with local springs and wells it must be borne in mind that Marseilles is one of the oldest towns in that part of the world. Justitian relates that, 599 years before Christ, a colony of Phœnicians from the Ionian islands built a town on the spot now known as Marseilles. There has been, therefore, ample time for contamination of the subsoil; nor is it to-day an easy matter to decide how earth can be purified on which filth has been thrown for something like 2500 years. It seems that from the very first the water-supply was in more senses than one a fundamental question at Marseilles. It appears that Gyptis, the daughter of King Senan, who ruled over the aborigines, the Celto-Lygians, became enamoured of the Phœnician leader Peranus. At a festival Gyptis offered Peranus a glass of water, and this was the sign of betrothal. Over this glass of water the alliance was established between the barbaric natives and the civilised Phœnicians. The latter were then allowed to build the town of Marseilles, and it has ever since remained a great commercial centre. From Marseilles the Phœnicians established colonies at Hyères, Toulon and Nice—in fact, along the whole Riviera. Apart from wells and a few local springs water was taken from two small streams that flow close to Marseilles. The smallest is called the Jarret. The town faces the sea; this rivulet runs parallel with the sea behind the town and falls into the Huveanne, a larger stream, which runs at right angles with the sea and falls into it at the Prado beach. From the earliest times aqueducts were constructed to bring the waters of these streams to the town; but there are ruins remaining which show that, under the Roman occupation, better water was brought in aqueducts from a greater distance. The exceptional dryness of the country always rendered the water question a matter of difficulty. The springs and wells in the town frequently became dry, and new aqueducts and larger intakes from the Jarret and the Huveanne had to be built. But, leaving aside the ancient history of the town and coming to modern times, we found that from 1830 to 1840 Marseilles suffered terribly from want of water. In 1834 there was a complete stoppage of the supply; nevertheless, in spite of this, of the cholera and of the plague, the population, which had been estimated at 75,000 persons in 1696, had more than doubled at the commencement of this century. During the great drought a source of water was discovered in the district of La Rose, which is traversed by the Jarret stream, and a company was formed to exploit this supply. A small quantity of the La Rose spring-water is still drunk. Another company also started supplying water from Malpassé, near the La Rose district, but the town bought up their distributing plant and finally sanctioned the grand scheme conceived by the late M. F. de Montricher, Inspector of the Ponts et Chaussées. In spite of all the obstacles that had to be overcome, including the mountainous district which had to be traversed, this eminent engineer proposed to bring the waters of the great river, the Durance, to Marseilles. The works were commenced in November, 1839, and on July 8th, 1847, the waters of the Durance poured into Marseilles, and this at the rate of about 2600 litres per second. The canal and aqueduct built have a total length of eighty miles. The water is taken direct from the River Durance near the Pertuis bridge. After a journey of about nine miles it reaches a large settling basin called St. Christophe, which measures 1,500,000 cubic metres. From this point the water flows onwards by the Roquefavour aqueduct to a second reservoir, called the Réaltort, which has a capacity of 4,500,000 cubic metres, and there are four other smaller settling tanks or basins. Some nine miles beyond the Réaltort, at a place called Gavotte, there are branches of the canal which go to St. Louis and St. Henri, suburbs to the north of Marseilles; other branches go in a southerly direction, but the principal supply reaches Marseilles on the heights of Longchamp. Here are situated the magnificent Palace of Fine Arts and the Museum, in the centre of which a splendid cascade plays at the foot of the statue raised in honour of M. de Montricher, the engineer who had so successfully provided Marseilles with this abundant supply of water. In consequence of these works Marseilles, so far as the quantity of water is concerned, may be considered one of the most favoured towns in Europe. There are, it is reckoned, about 700 litres of water per day per inhabitant. But unfortunately the quality does not correspond with the quantity.

The Durance is one of the muddiest rivers in France. M. Hervé Mangon has calculated that it sweeps away every year a volume of vegetable earth equal to about 3000 hectares, or 7000 to 8000 acres. At this rate the Durance would carry to the sea enough earth to cover a small county or a French department in the course of fifty years. This is not, therefore, precisely the water one would select for drinking purposes. Moreover the canal along which it travels is exposed to the air during the greater part of its course; therefore the water is too hot in summer and too cold in winter. If kept in a bottle and in the shade it loses 25 per cent. of oxygen in two or three days. Dr. P. David states that this water has but few coloured microphytes and too many bacteria, notably the bacterium coli commune. Dr. Rietsch, Professor at the Medical School of Marseilles, reports on this subject that the waters of the Durance canal may be considered fairly good before they reach the town of Marseilles, at Gavotte and even at Merlan. It is between Merlan and Longchamp that the contamination is especially evident, yet it is the Longchamp water which the people of Marseilles drink. From Merlan to Longchamp, a distance of four miles, the canal, though uncovered, crosses a thickly populated district and is constantly exposed to contamination. Further, the canal passes through twenty flour-mills and two oil-mills. The water serves as a motive power to turn the wheels of these mills; but, worse still, it is employed to wash the corn and is then thrown back into the canal. A good deal of this corn is reported to have come from the cholera-stricken districts of Russia. These evils were denounced more than twenty-five years ago; yet all this time has elapsed without anything being accomplished to modify them. The waters of the Durance are not filtered, either at the point of departure or at their arrival. The settling basins remove only a portion of the heavy substances carried by the water. The Réaltort settling basin is so deep that the mud which has fallen to the bottom is not removed. The water remains here so long as to almost become stagnant. The Réaltort is, too, below the level of the canal, so that it is only the water from the surface of the basin which is carried off with a slight admixture of the water from the lower depths. This lower water is fouler still, for it is nearer to the deposits and has not been in constant movement. Indeed, it is a question whether these precipitating basins do not do more harm than good. If the water is kept moving it will not clarify; if it is kept still, then it soon becomes foul. The water of the canal is said to bring from the Durance two cubic metres of mud per day, and it is never really clarified. With the high temperature that prevails at Marseilles the spores of the bacteria develop very rapidly, the oxygen of the water disappears little by little, the infusoria themselves can no longer live, and the coloured vegetation, which is concerned in the purification of the water, in its turn becomes a cause of impurity.

Originally, M. F. de Montricher had intended to clarify the water by making it pass through a great number of settlingtanks, and £60,000 were spent to establish means of filtering at Longchamp. But now the filter no longer works, and the settling-tanks or basins are choked with mud.

Of course any number of projects have been brought forward to remedy this state of things. One proposal is to dig under the Durance and collect waters which shall have been filtered naturally by passing through the bed of the river. This, however, would be an expensive undertaking. The town derives an income of £5200 per annum from the mills &c. where the water is used as a motive power. Though these mills may be the cause of contamination, the town does not care to abandon so lucrative a source of income. The most practical scheme would be to divert a portion of the water in the neighbourhood of Merlan—that is, before the canal reaches the mills and the district where it is likely to be soiled. From Merlan covered underground pipes could bring a portion of the water to settling basins and filtering beds that could be established at Sainte Marthe. The water thus secured would escape the chief danger of contamination and be more fresh and more limpid, but there would be a much smaller quantity.

Dr. David has made an exhaustive analysis of the water of the Durance, from which we will quote only those data which furnish evidence of the state of the water as regards organic impurity. In the original report the results are given in grammes and milligrammes per litre of the water, but for the convenience of our readers we record them in grains per gallon. In appearance the water is dirty and turbid, there

being a fairly considerable deposit in the bottle. The suspended matter sometimes amounts to as much as 175 grains.

	Grains per gallon.
Total solids	25·41
Chlorine	1·19
Nitrates	traces.
Nitrites	slight trace.
Free ammonia	0·0007
Albuminoid ammonia	0·0021

In spite of the frequent presence of a large quantity of suspended matter, the character of which Dr. David does not discuss, the water if regarded in the light of mere chemical analysis is of fairly good quality. This of course does not exclude the danger of occasional or temporary contamination. Pathogenic germs might find their way into the open canal. As a matter of fact the bacteriological examination made by Dr. David was not entirely satisfactory. In the absence of dissolved organic matter of any importance, as illustrated in the ammonia, both free and albuminoid, it is probable that the suspended matter consists mainly of clayey substance. There is no evidence of existing or past animal contamination according to the quantity of nitrogen, either in the form of ammonia, nitrate or nitrite. Suspended matter or turbidity, so long as it rapidly and completely subsides, may after all be a blessing in disguise, as the mere mechanical settling of a sediment in water is remarkably efficacious, according to recent experiments, in the removal of organisms. Settling tanks may obviously, however, become disease-disseminating centres from neglect to dredge and remove the accumulated and germ-abounding deposit contained in them. It is therefore safe to endorse the opinion of Dr. David regarding the water of the Durance—that untreated it is only of average quality and that by filtration it would undergo considerable improvement.

This water of the Durance, though it may be open to criticism, is the best available at Marseilles, and it is this water which is laid on at the docks. The ships fill their tanks with the waters of the Durance and all travellers from Marseilles have to drink this water when on board; but when travellers land at Marseilles, and especially if they frequent the neighbourhood of the old port, they run the risk of drinking other waters of a far more dangerous character. M. Guerard, engineer of the port, subdivides the water-supply of the commune of Marseilles in the following manner: Waters of the Durance, for drinking and industrial purposes, 1550 litres per second; for public services, 1650 litres; for irrigation, 3800 litres: total, 7000 litres per second. Waters of the Huveanne, for domestic purposes, 75 litres; and for public service, 25 litres: total, 100 litres per second. Waters of La Rose, for domestic purposes, 5 litres; and the waters of the Grands Puits enough for six public fountains. The source of the River Huveanne is in the Department of the Var, at a distance of twenty-five miles from Marseilles. This river passes through several thickly populated districts, notably the town of Aubagne. The aqueduct which brings the water of the Huveanne to Marseilles was built in 1612, when the river was much purer. The water comes from the neighbourhood of St. Marcel and reaches a reservoir of 110 cubic metres capacity placed in the yard of the ancient convent of the Présentines, near the gendarmerie barracks, a communal boys' school and the female prison. The gendarmes drink this water and have suffered greatly from typhoid fever and from cholera. M. Guerard, in his able reports on the cholera epidemics of 1884 and 1885, has traced on maps the various canalisations of the different water supplies; but it must be carefully noted that in 1884 the cholera broke out in the town itself some time before any cases were reported as occurring in the regions from whence the water-supply was derived. M. Guerard is of opinion, therefore, that the water was not the vehicle by which the cholera was propagated in Marseilles in 1884. Nevertheless, those districts where the waters of the purer spring of La Rose are drunk—namely, the districts of the Madeleine, Longchamp, Plaine St. Michel, Préfecture and Palais de Justice—were comparatively free from cholera. The greatest number of deaths from that disease occurred on the northern side of the old port, and here the waters of the Huveanne are drunk; but the same waters were distributed in the southern districts, and there very few deaths were recorded. In 1885, however, a different experience is noted. On Aug. 20th the cholera epidemic increased very considerably. There had been 30 deaths on Aug. 19th, there were 64 deaths on the 20th, and these deaths occurred principally in the old quarters of the town, where the waters of the Huveanne are drunk. The intake of this water is only a few miles below the village of La Penne and the town of Aubagne. Just a week before the increase of cholera at Marseilles the epidemic had broken out both at La Penne and Aubagne. Though when taken altogether there were fewer deaths from cholera at Marseilles in 1885 than in 1884, there were a great many more deaths from cholera in the year 1885 in all the streets which were supplied with water from the Huveanne. Again, in October last year, with regard to the 82 deaths attributed to cholera, 20 of the victims, it was ascertained, had been drinking the Huveanne water.

In consideration of these facts the recent analysis of Dr. David is interesting. The results he gives (translated into grains per gallon) are as follows:—

	Grains per gallon.
Total solids...	24·92
Chlorine	2·10
Nitrates	Traces
Nitrites	Traces
Free ammonia	0·0014
Albuminoid ammonia	0·0084

The water in appearance is dirty and turbid. There is but little doubt that existing pollution is indicated in this analysis by the excessive amount of albuminoid ammonia. It may be pointed out that albuminoid ammonia is the ammonia which the water yields when it is boiled with alkaline permanganate. This item in the analysis of a water indicates, in fact, the existence of nitrogenous matter that is readily changed into the simpler compound, ammonia. In other words, it represents nitrogenous matter that is very susceptible to putrefactive changes. The chlorine suggests organic contamination, and the fact that distinct traces of nitrites were recognised is corroborative evidence. Dr. David is led to regard the water derived from the Huveanne as of bad quality and accordingly views it with suspicion. Based upon the above results such can be the only interpretation.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Plymouth Urban and Port Districts.—Mr. Williams has issued a very complete report on these two districts for the year 1892. The town council of Plymouth are apparently taking active measures with regard to the housing of the working classes within the borough. A better water-supply is about to be provided and the re-sewering of the town is being pushed forward. Dr. E. Frankland has been consulted on the question of the treatment of the sewage and has presented a report suggesting both mechanical and chemical treatment, the chemical to consist of the addition of five grains of permanganate of soda to each gallon of sewage. His report has been adopted by the council. The estimated population of Plymouth in 1892 was 85,610 and the corrected death-rate for the year 18·4. The infantile mortality amounted to 137 per 1000 births, whilst the mortality of illegitimate children under one year of age was found to be no less than 296·7 per 1000 births, or twice that of legitimate children. The borough hospital is said to be fully appreciated by the public, and during the year cases had to be refused admission for want of accommodation. Plymouth is still unprovided with a disinfecting apparatus, and Mr. Williams, in advocating the erection of one, states that "generating sulphurous acid by burning sulphur is a broken reed on which to rely, and is practically of little service in disinfecting clothes and bedding." There was a limited outbreak of small-pox in the borough during the year, and the council seem to have been so much impressed with the value of the hospital ship *Pique*, which was lent to them by the port sanitary authority, that they have now purchased and fitted up a similar vessel for the isolation of small-pox patients. Mr. Williams is of opinion that in some cases of small-pox the disease spreads aerially from house to house, as he was quite unable to obtain any information as to direct intercommunication. In addition to being medical officer of health for the borough, Mr. Williams occupies a similar position with regard to the port, and in this capacity he tells us, that from Aug. 25th to Nov. 21st medical inspection of every vessel from an infected or suspected port

took place, and that the inspection was carried out by night as well as by day. It is interesting to note that the steamship *Arawa* arrived at Plymouth with two cases of yellow fever on board. The vessel was placed under quarantine and ordered to proceed to the Motherbank. We presume Mr. Williams was brought into contact with the vessel in his capacity of quarantine officer to the Privy Council, and not as port medical officer of health. During the year, 2798 vessels were inspected by the sanitary inspector. As giving some idea of the vast importance to the health of seamen of these inspections, the report states that the crews on these vessels numbered no less than 22,178. There were 176 vessels found to have sanitary defects. The report contains some good charts, maps and diagrams.

Hastings Urban Sanitary District.—During the last decade Hastings has added about 10,000 to its population. The natural increase has been only 3500, so that the difference is to be attributed mainly to immigration. The general death-rate for 1892 was 17·4 and the zymotic 1·51. The infantile mortality amounted to 145·7 per 1000 registered births. There have been 134 cases of scarlet fever notified during the year, and Dr. Wilson tells us that the greater number were traced to infection derived from London. The type was remarkably mild, as amongst the total of 134 cases attacked, no deaths occurred. In connexion with infectious disease in elementary schools, we read that the head teachers are supplied with printed forms which are filled in and forwarded to the medical officer of health in the event of "the existence of infectious disease or suspicious cases amongst the absentees from the schools." The School Board authorities have given their consent to the carrying out of this arrangement.

Thingoe Rural Sanitary District.—The authority of this district is the one which has ventured to lead the way in acting upon the powers conferred upon rural sanitary authorities by Part 3 of the Housing of the Working Classes Act, 1890. The West Suffolk County Council were applied to by the authority, and after due inquiry permission was given to adopt Part 3 of the Act in question. It was then decided to purchase four acres of land for the sum of £160 and to approach the Local Government Board with a view of obtaining a loan of £1500 to defray the cost of erecting eight cottages upon the site. Permission to borrow the amount has been granted and the cottages are now being erected. All those concerned in the difficult question of the housing of the working classes will watch this experiment with great interest, and the Thingoe rural sanitary authority are to be congratulated on the action they have taken. If the cottages, which are in the course of erection at Ixworth, turn out a success, we shall doubtless have to chronicle other proceedings of a similar nature under the same Act; in fact, Dr. Thresh has already brought the matter before the notice of the rural sanitary authority of Chelmsford. Mr. Kilner reports that in consequence of an outbreak of diphtheria at a farm in Great Barton, the sale of milk and butter from the farm was temporarily prohibited. Thirteen houses were closed during 1892 as being unfit for human habitation. The general death-rate of the district was 15·24, and the zymotic death-rate 0·50; the infantile mortality was 118·6.

Barnsley Urban District.—Dr. Sadler records a general death-rate of 20·79 for this district, and a zymotic death-rate of 1·96. During the year 1892 there were 255 cases of infectious disease notified, and of this number 43 were cases of small-pox. Owing to the great demand which was made by this disease upon the Kendray Isolation Hospital, its use for other infectious diseases was considerably impaired. It was from this hospital that a delirious small-pox patient succeeded in effecting his escape and he was captured only after he had wandered some distance away. He was brought back to the hospital within two hours of his escape, but in that time he succeeded in spreading infection far and wide. Without going into details, we quote from the report that "altogether in Barnsley and the adjoining township 21 cases were so traced with certainty to the man's short escape from the hospital and 14 others were in all probability also due to it, besides the 2 which had been infected the day before he was removed." It is a point of considerable interest to note that some of those infected asserted that they had not been within six or eight yards of the patient. Another outbreak of the same disease was apparently traced to a case of unrecognised small-pox amongst the girls working in a factory of the town. In the Kendray Hospital there is no proper accommodation for delirious patients, nor is there provision for the isolation of doubtful cases or of cases which have been exposed to infection. We are glad to see that Dr. Sadler has succeeded in persuading his authority to add these very necessary adjuncts to a fever hospital, and that application is to be made to the Local Government Board for permission to borrow £1200 to defray the expense. The report states that the Factory Act of 1891 has conferred upon the sanitary authority the inspection of thirty-two workshops, and that all of them have been duly visited.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 6445 births and 4240 deaths were registered during the week ending April 22nd. The annual rate of mortality in these towns, which had declined in the preceding three weeks from 21·2 to 20·8 per 1000, rose again last week to 21·4. In London the rate was 21·0 per 1000, while it averaged 21·8 in the thirty-two provincial towns. The lowest rates in these towns were 12·4 in West Ham, 13·9 in Croydon, 15·5 in Hull, 16·0 in Norwich, and 16·6 in Huddersfield; the highest rates were 25·6 in Manchester, 25·7 in Bristol, 26·0 in Oldham, 28·4 in Liverpool, and 28·9 in Preston. The 4240 deaths included 468 which were referred to the principal zymotic diseases, against 408 and 422 in the preceding two weeks; of these, 157 resulted from measles, 112 from whooping-cough, 72 from diphtheria, 45 from scarlet fever, 38 from diarrhœa, 23 from "fever" (principally enteric) and 21 from small-pox. No fatal case of any of these diseases occurred last week in Derby or in Sunderland; in the other towns they caused the lowest death-rates in Bristol, Huddersfield and Hull, and the highest rates in Cardiff, Gateshead, Newcastle-upon-Tyne, Leeds, Bolton and Preston. The greatest mortality from measles occurred in Portsmouth, Cardiff, Gateshead, Plymouth, Leeds, Newcastle-upon-Tyne, Bolton and Preston; from scarlet fever in Leicester; and from whooping-cough in Norwich, Birkenhead, Halifax and Gateshead. The mortality from "fever" showed no marked excess in any of the large towns. The 72 deaths from diphtheria included 47 in London, 4 in Birmingham, 3 in Cardiff, 3 in Salford, and 3 in Sheffield. Nine fatal cases of small-pox were registered in London, 3 in Birmingham, 2 in Manchester, 2 in Halifax and 1 each in West Ham, Oldham, Burnley, Leeds and Sheffield; 419 small-pox patients were under treatment in the Metropolitan Asylum Hospitals and 31 in the Highgate Small-pox Hospital, making a total of 450, against 263, 321 and 423 on the preceding three Saturdays. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 2037, against 2030, 2024 and 2026 on the preceding three Saturdays; 267 new cases were admitted during the week, against 194 and 198 in the preceding two weeks. The deaths referred to diseases of the respiratory organs in London, which had been 400 and 416 in the preceding two weeks, declined to 390 last week, and were 4 below the corrected average. The causes of 83, or 2·0 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Nottingham, Oldham, Newcastle-upon-Tyne and in five other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Leicester, Liverpool, Salford and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 23·1 and 22·0 per 1000 in the preceding two weeks, rose again to 22·7 during the week ending April 22nd, and exceeded by 1·3 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 16·8 in Leith and 17·2 in Perth to 24·1 in Paisley and 26·3 in Glasgow. The 641 deaths in these towns included 58 which were referred to measles, 24 to whooping-cough, 7 to diarrhœa, 6 to scarlet fever, 6 to "fever," 4 to diphtheria, and 1 to small-pox. In all, 106 deaths resulted from these principal zymotic diseases, against 84 and 87 in the preceding two weeks. These 106 deaths were equal to an annual rate of 3·8 per 1000, which exceeded by 1·4 the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of measles, which had been 41 and 47 in the preceding two weeks, further rose to 58 last week,

of which 45 occurred in Glasgow, 4 in Edinburgh and 3 in Paisley. The deaths referred to whooping-cough, which had been 17 in each of the preceding three weeks, rose to 24 last week, and included 19 in Glasgow and 3 in Edinburgh. The 6 fatal cases of scarlet fever exceeded by 4 the number in the preceding week and included 4 in Glasgow. The 6 deaths referred to "fever" also exceeded those recorded in recent weeks, and included 2 in Edinburgh. Of the 4 fatal cases of diphtheria 3 occurred in Glasgow. The deaths referred to diseases of the respiratory organs in these eight towns, which had been 139 and 126 in the preceding two weeks, further declined to 122 last week, and were 41 below the number in the corresponding week of last year. The causes of 60, or more than 9 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 28·8 and 21·5 per 1000 in the preceding two weeks, rose again to 28·7 during the week ending April 22nd. During the first three weeks of the current quarter the death-rate in the city has averaged 26·3 per 1000, against 20·6 in London and 19·4 in Edinburgh. The 194 deaths in Dublin during the week under notice showed an increase of 50 upon the number in the preceding week, and included 4 which were referred to "fever," 3 to whooping-cough, 2 to measles, 2 to diarrhœa, 1 to diphtheria and not one either to small-pox or scarlet fever. In all, 12 deaths resulted from these principal zymotic diseases, against 12 and 11 in the preceding two weeks. These 12 deaths were equal to an annual rate of 1·8 per 1000, the zymotic death-rate during the same period being 2·5 in London and 2·0 in Edinburgh. The deaths referred to different forms of "fever," which had been 2 and 3 in the preceding two weeks, further rose to 4 last week. The fatal cases of whooping-cough, which had been 6 and 3 in the preceding two weeks, were again 3 last week. The 2 deaths referred to measles also corresponded with the number recorded in the preceding week. The 194 deaths registered in Dublin last week included 29 of infants under one year of age and 54 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons exceeded those recorded in any recent week. Four inquest cases and 2 deaths from violence were registered; and 85, or nearly a half, of the deaths occurred in public institutions. The causes of 7, or nearly 4 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

MOVEMENTS OF THE MEDICAL STAFF.

THE following officers have arrived from India in the *Euphrates* on completion of a tour of service:—Brigade-Surgeon-Lieutenant-Colonel Muir and Surgeon-Captains Saw and Buchanan. Surgeon-Captain Carte has arrived from India on sick leave. Surgeon-Major Briggs has been posted to the South-Eastern District. Surgeon-Major Gunning has joined at Chester and Surgeon-Captain Windle at Lichfield. Surgeon-Lieutenant-Colonel Gunning has arrived from India on sick leave.

ARMY MEDICAL STAFF.

Surgeon-Colonel Henry Foljambe Paterson, M.D., F.R.C.S. Edin., to be Surgeon-Major-General, vice J. B. C. Reade, C.B., retired (dated April 1st, 1893). Brigade-Surgeon-Lieutenant-Colonel William Nash, M.D., to be Surgeon-Colonel, vice H. F. Paterson, M.D., F.R.C.S. Edin. (dated April 1st, 1893). Surgeon-Lieutenant-Colonel Edmond Townsend, M.D., to be Brigade-Surgeon-Lieutenant-Colonel, vice W. Nash, M.D. (dated April 1st, 1893). Brigade-Surgeon-Lieutenant-Colonel John Edward Fannin retires on retired pay (dated April 26th, 1893). The undermentioned Surgeon-Lieutenant-Colonels retire on retired pay (dated April 26th, 1893):—Robert Anderson, F.R.C.S. Edin., and Chas. Barromeo Jennings, from half-pay.

INDIA AND THE INDIAN MEDICAL SERVICE.

The following appointments are announced:—Surgeon-Captain A. E. Tate, M.S., to the Civil Medical Charge of the Muttra district, in addition to his military duties, from March 10th, 1893. Surgeon-Major J. Anderson, Civil Surgeon, Bareilly, to the Visiting Medical Charge of Pilibhit, from March 9th, 1893. Surgeon-Captain G. C. Hall to be attached to the General Hospital, Madras, as a temporary arrangement and to act as District Surgeon, Salem, during the absence of Surgeon-Lieutenant-Colonel A. N. Rogers-Harrison, on leave. Surgeon-Colonel A. C. Gaye, Army Medical Service, to be Principal Medical Officer, Belgaum and Bangalore Districts, vice Surgeon-Colonel J. Inkson, M.D., transferred to the Home Establishment on promotion. Brigade-Surgeon-Lieutenant-Colonel Thomson to be Surgeon-General, vice Hilson, retired. The services of Surgeon-Major C. W. Owen, C.M.G., C.I.E., Surgeon to his Excellency the Commander-in-Chief in India, have been placed at the disposal of the Punjab Government for employment in the Patiala State. Surgeon-Lieutenant-Colonel Kenneth Mackenzie Downie, M.D., 29th Bengal Infantry, has been permitted to retire from the service. Surgeon-Captain J. Chaytor White, M.B., Indian Medical Service (Bengal), Officiating Medical Officer of the Meywar Bhil Corps, is granted ninety days' privilege leave. Surgeon-Lieutenant-Colonel W. A. D. Fasken, Civil Surgeon, Farukabad, is granted privilege leave for two months and fifteen days.

NAVAL MEDICAL SERVICE.

The following appointments are announced:—Staff Surgeons: Robert M'Ivor to the *Barham* (dated May 2nd, 1893); Charles James to the *Alexander* (dated April 25th, 1893); and Edward W Luther to the *Melampus* (dated April 27th, 1893). Surgeons: Bassett C. E. F. Gunn to the *Wildfire* (dated April 25th, 1893); C. J. Fyfe to the *Wanderer* (dated April 18th, 1893); Charles S. Bennetts to the *Virid*, additional (dated April 27th, 1893); and John E. Cood to the *Cambridge* (dated April 28th, 1893).

VOLUNTEER CORPS.

Artillery: The Highland: Second Lieutenant Gordon Abercrombie Lang, M.B., to be Surgeon-Lieutenant (dated April 22nd, 1893).—*Rifle:* 2nd Volunteer Battalion, the Royal Scots Fusiliers: Surgeon-Major R. Girvan to be Surgeon-Lieutenant-Colonel dated April 22nd, 1893).—1st Volunteer Battalion, the Prince of Wales's (North Staffordshire) Regiment: Joseph William Dawes, M.B., to be Surgeon-Lieutenant (dated April 22nd, 1893).—5th (Deeside Highland) Volunteer Battalion, the Gordon Highlanders: Wm. Gordon Mitchell, M.D., to be Surgeon-Lieutenant (dated April 22nd, 1893).

THE INTERNATIONAL MEDICAL CONGRESS AT ROME.

Surgeon-Major Perry, Professor of Surgery in the Lahore Medical College, will represent the Punjab at the International Medical Congress at Rome.

THE CHICAGO SANITARY CONGRESS.

Professor J. Lane Notter of the Army Medical School, Netley, has been selected as a representative of the British Army to attend the Sanitary Congress to be held at Chicago under the auspices of the World's Congress Auxiliary.

TROOPSHIP SERVICE.

H.M.S. *Malabar* sailed on April 8th, 1893, from Bombay with 13 officers, 323 men, 16 women and 38 children for Netley.

DEPUTY-INSPECTOR-GENERAL WILLIAM TELFER.

Deputy-Inspector-General of Hospitals and Fleets William Telfer, who retired from the service in 1881, died at Paignton, Devonshire, on Friday, April 21st. The deceased gentleman entered the Navy as surgeon in 1843, attained the rank of Staff-Surgeon in 1856, was promoted to Fleet-Surgeon in 1871 and to Deputy-Inspector-General of Hospitals in 1881. He served throughout the Russian war and was present at the siege and bombardment of Sebastopol in 1854, for which he gained the Crimean and Turkish medals with Sebastopol clasp. He also held the China medal and Turkish clasp for service at the blockade of the Canton River and the storming and capture of the city. He was in his sixty-ninth year.

A PASTEUR INSTITUTE FOR INDIA.

The editor of the *Civil and Military Gazette* wishes to bring to the notice of all who are interested in India and in the progress of medical science the fact that a movement has been set on foot for the establishment of a Pasteur Institute in the Punjab Himalayas, where the climate is suitable for bacteriological study. The object of the institute is not only the treatment of cases of hydrophobia from all parts of India, but the prosecution of scientific research into such diseases as cholera, typhoid fever, leprosy &c. The great prevalence of hydrophobia in India and the distance from Europe are strong reasons for the establishment of such an institute. The scheme has received the approval of the Punjab and other local governments, and a strong committee has been

formed on which the leading medical men have places. When a British soldier has been bitten by a rabid dog the Indian Government has very generously been at the expense of sending the patient to Paris for treatment, but it would be impossible for the Government to do this for all those of its 250 millions of subjects who might require it. The scheme is estimated to cost ten lakhs of rupees and the aid of those interested in India is solicited.

HOMES IN THE HILLS.

A home in the hills for lady nurses employed in military hospitals in India an officers' hospital or convalescent home in connexion therewith were to be opened this month at Murree and Kasauli. The formation of an institution of this kind originated, we believe, with Lady Roberts. The patients will have the advantage of skilled nursing at very moderate terms, and these homes should supply a need that has been long felt by sick and convalescent officers proceeding to the hills for the recovery of their health after sickness in the plains. There is no need to dwell upon the importance of skilled nursing in such diseases as typhoid fever, for example, because it is universally recognised. The absence of trained nurses in India was often a subject of much difficulty and distress to medical officers in the treatment of their cases. Moreover, it was occasionally almost equally important to be able to send a sick officer to some place in the cooler atmosphere of the hills where his requirements could be supplied and he could also be kept under observation at the same time. We are glad to say that the young officer now serving in India is far better off in both these respects than he was a few years ago.

Correspondence.

"Audi alteram partem."

"DEFINITION OF PUERPERAL FEVER."

To the Editors of THE LANCET.

SIRS,—The questions which Mr. Morris has raised with reference to puerperal fever and its notification seem to me to be worthy of more than cursory notice. They raise important points as to (1) the exact nature of puerperal fever, and (2) the position of sanitary authorities with regard to its notification.

1. Strictly speaking, of course, the term "puerperal fever denotes any condition accompanied by rise of temperature during the puerperal period; but of these conditions it is usual to exclude those connected with diseases common to the lying-in and other periods. Rises of temperature connected with lactation and morbid conditions of the breasts are not unfrequently included, more because the genesis of the fever is not traced to its foundation than for any valid reason. Excluding these classes of cases, there can be little doubt that the main cause of rise of temperature in the lying-in state is sepsis. Now according to some authorities there is autogenetic puerperal fever and heterogenetic. Let me pause and consider the situation. The fission fungi—members of which group are known definitely in some cases to be disease producers and are suspected in others, often with very good reason—have a definite place in nature's economy; they are the agents of change, their function being that of breaking up dead vegetable and animal material to render it fit for the use of the higher plants. The uterus more especially, and the genital passages to a less extent, after delivery undergo the processes of waste and repair; and not only are the products of these present, products which normally are absorbed in the body or are thrown out in the discharges, but not unfrequently fragments of tissue, greater or less, remain which ought to have been got rid of after the delivery of the child. Hence it may be stated that in every case of delivery a woman possesses a nidus for the growth of one or other of the fission fungi either in greater or less degree, and it is on this basis of fact that the foundation of antiseptic midwifery is laid. Puerperal fever, then, is autogenetic in so far as delivery implies the existence of a nidus, and is heterogenetic in so far as the active agent of disease comes from without. The limits of a letter such as this forbid me to enter the fertile field of discussion, which naturally here arises, as to the various clinical phenomena connected with puerperal fever, their explanation and origin. For my present purpose all I wish to establish is that the disease which the law requires to be notified is one due to infection from without, and that any fever occurring in the lying-in period, exclusive of those excepted above, is notifiable as puerperal fever—reading the terms of the Act strictly.

2. The position to be taken up by the sanitary authority and its officials is one of some difficulty, as indeed it often is in connexion with other notifiable diseases. Medical officers of health, I venture to think, not unfrequently take up a wrong position with regard to cases of infectious disease in which all the symptoms necessary for a definite classification of the disease are not present at the time of their visit, and very likely were not when medical aid was first called. Cases such as these, often met with early in the outbreak of epidemics, at all events merit careful investigation and observation, and ought not to be treated lightly by sanitary officials. So with regard to puerperal fever, cases, however slight, ought to be notified and watched.

Mr. Morris, again, raises the vexed question as to the forbidding of midwives to follow their calling after attending a case of puerperal fever. Personally I have no doubt that it is unnecessary to do so if the midwife understands what antiseptic precautions are. It is my experience, however, to find that there are a great many midwives, male and female, who do not. If the female midwife is to be placed under a ban, why not the male also? And here comes the crux. It is possible for a person to be attending at the same time septic cases of any kind, or even to be doing post-mortem work, and confinements without risk to the women, and it is done every day by many men in practice. Without a proper appreciation of the details of antiseptic precautions on the part of the attendant there is, however, a great risk in attending the lying-in woman. It appears to me, then, that the advice on this point to be given to a sanitary authority by a medical officer would vary with the case and its conditions, and must depend upon a thorough knowledge of the facts and his own judgment.

I am, Sirs, yours truly,

Hatfield, April 23rd, 1893. LOVELL DRAGE.

DEATH UNDER ETHER.

To the Editors of THE LANCET.

SIRS,—An inquest was held at this infirmary on the 4th inst. respecting the death of a man aged fifty-six, who was admitted here suffering from laryngeal obstruction, which necessitated tracheotomy. Ether was administered by means of Clover's inhaler, the indicator never being turned beyond No. 1. The pulse improved at first, but after from four to five minutes it became weaker and slower. The anæsthetic was discontinued, but the heart's action ceased; respiration occurred after the pulse had failed. There were no signs of asphyxia; the countenance was pale. The medical superintendent did not perform the operation, as the symptoms pointed to syncope rather than asphyxia. Every means, including artificial respiration, galvanism, subcutaneous injection of ether were tried, but in vain. At the post-mortem examination we found the heart pale, enlarged and flabby, showing signs of fatty degeneration, there was some dilatation and considerable atheromatous disease of the arch and thoracic aorta. The larynx was œdematous; all other organs healthy. In consequence of the patient being very nervous and difficult to manage, a general anæsthetic was considered desirable as distinguished from a local one—*e.g.*, cocaine—and having regard to the weak condition of the heart ether was chosen in preference to chloroform. The case is at once interesting and obscure in that death occurred from syncope during the inhalation of ether. I think it ought to be recorded, and venture to hope you may find room for it in your next issue.

I am, Sirs, yours faithfully,

ARTHUR CHILCOTT,
Assist. Medical Officer

St. Mary Abbotts' Infirmary, Kensington, W., April 24th.

"DEATH CERTIFICATION."

To the Editors of THE LANCET.

SIRS,—"If it were the case that a fee of half a crown would cost between £60,000 and £70,000 annually, then I would put aside the question of fee." So said Dr. Danford Thomas the other day before the Committee on death certification. On the other hand, Sir Spencer Wells declared that

"certificates should be paid for by the State, or some local authority. It was required by the nation," said he, "and the nation should pay for it. If I were told that it would cost £60,000 per annum to give 2*s.* 6*d.* for each certificate, then I would say that was a trifle" &c.

"Look on this picture and on that." I think it would be a trifle both to the nation and to the individual certifier who discharges a duty so grave and so responsible and one charged with such penalties. Sir Spencer Wells will be thanked by all fair-minded men in and out of our profession and very warmly by the poor rank and file of it, who get more kicks than ha'p'orths, insults and injuries than fees, for their incessant labour the day long and often far into the night, fighting disease in his own strongholds amid scenes of human squalor, vice and wretchedness. I for one have always held that medical men should be paid by the State for death certificates.

I am, Sirs, yours truly,

A. ROSS PATERSON, M.D.

Stockton-on-Tees, April 24th, 1893.

To the Editors of THE LANCET.

SIRS,—I wish, with your permission, to say a few words about midwives and certification of death by such persons. I think that many abortions and miscarriages attended by midwives could be prevented if a medical man were sent for in time. My experience of certificated midwives is that they are for the most part incompetent to judge whether miscarriage is inevitable or not, and uncertificated persons have no idea whatsoever on that point. When anything is done, except to wait, by either class it is in the direction of making miscarriage inevitable—the administration of something to "strengthen the pains." I think that the certificate of an uncertificated person should not be accepted at all, as she herself through want of skill may be the cause of a child's death; and certificates of supposed qualified persons should not be accepted for other than stillborn children or those dying before a medical man could be called in.

I am, Sirs, yours faithfully,

St. Helen's, Lancs, April 22nd, 1893. E. J. GILLERAN.

DR. F. NORTON MANNING.

To the Editors of THE LANCET.

SIRS,—Permit me to correct a note in your issue of Feb. 11th, p. 315, 2nd column. You record the appointment of Professor Anderson Stuart as Medical Adviser to the Government, in succession to Dr. F. Norton Manning, *deceased*. Dr. Manning resigned his appointment as Medical Adviser, but still retains his office of Inspector-General of the Insane, which he has held since November, 1867. I may add that Professor Stuart also holds the appointments of Health and Emigration Officer for Port Jackson and President of the Board of Health.

I am, Sirs, yours truly,

Macquarie-street, Sydney, N.S.W., March 16th, 1893. EDMUND FAGEN, Secretary.

*** We have also received a letter from Dr. Manning himself, in which he says "I resigned the appointments of Medical Adviser to the Government of New South Wales and President of the Board of Health in that colony in order to devote more time to the office of Inspector-General of Hospitals for the Insane, which I still hold." We took the earliest opportunity of correcting the unfortunate clerical mistake in our next issue (Feb. 18th, 1893). We wish, however, to reiterate our regret that Dr. Manning should have been put to any inconvenience owing to the error into which we were inadvertently led.—ED. L.

"DISLOCATION OF THE PATELLA 'EDGEWAYS.'"

To the Editors of THE LANCET.

SIRS,—Mr. Miller's letter in THE LANCET of April 1st on the above subject reminds me of a case which I saw some ten or twelve years ago in a lad of about sixteen. The accident occurred whilst he was wrestling with another boy. It was quite easy to diagnose the nature of the accident, but the question was which edge of the patella was wedged between the condyles. In Mr. Miller's case the articular facets seem to have given the desired information. In the case I saw the ligamentum patellæ afforded the necessary help to a diagnosis of the position, for, being twisted on itself, one of its edges was rendered prominent and gave the clue as to which edge of the patella was projecting. I think this would ordinarily be a more sure guide than the facets, which it might not always be easy to feel, whereas the patellar ligament would probably always be easily felt, and if the outer edge were prominent this would, of course, imply that the outer edge of the patella was the free edge, and the inner edge that which was wedged between the condyles, and *vice versâ*. In the case I saw I found that the best position for the limb was one of slight flexion, and the lad being anæsthetised the bone was without much difficulty replaced by pressure with the palm of the hand.

I am, Sirs, yours faithfully,

Gower-street, April 4th, 1893. AWDRY PECK.

"EPITHELIOMA OF BOTH EXTERNAL EARS."

To the Editors of THE LANCET.

SIRS,—I am obliged to Dr. Snow for his letter in your issue of this week. Later I hope to send you a short account of the further development of the case in question and will merely say now that I am of opinion that there is already malignant disease of the left ear. The ulceration is slowly extending and the thickness of the ear increasing in parts.

I am, Sirs, yours truly,

W. J. ERNELY SUMPTER.

Sherringham, Norfolk, April 25th, 1893.

PROFESSOR VIRCHOW'S VISIT TO ENGLAND.

(FROM OUR BERLIN CORRESPONDENT.)

AT its meeting on the 19th inst. the Berlin Medical Society gave its President, Professor Virchow, a cordial welcome on his return from England. The hall in the Langenbeck House, in which the Society holds its meetings, was unusually full and the President's table was adorned with flowers. When Professor Virchow entered, accompanied by other officials of the Society, the members rose from their seats and welcomed him with loud applause. The Vice-President, Privy Councillor Dr. Siegmund, addressed him as follows: "Highly honoured Herr Virchow, a great nation has just shown you its esteem in a degree and with an enthusiasm far beyond what is usual in receptions accorded to men of science and learning. Some recognised in you their teacher, others their fellow-worker in the various fields of science, and the discoverer of many new regions of research. But, if we ask what has secured you this exceptional position and the esteem of men in the highest walks of science, the answer is that you are known abroad not simply as a man of science. Your endeavours to utilise every scientific discovery as a means of promoting the public good, combined with your undeviating support of all that you have recognised as right and helpful to the human race, have extended your popularity beyond the limits of our empire. No nation was better fitted to recognise your worth than the English nation, which we regard as setting the highest example in the right conduct of life. We thank this nation for the distinction it has conferred upon you; we thank you for having gained general recognition for the part played by Germany in science. We hope that the quality in which you surpass us all, the strength which Goethe so appropriately called 'the durability of the North' may long be preserved to you." Professor Virchow, in reply, said: "I must confess to you that it did not seem to me quite necessary that you should continue the too generous receptions which I have just left by giving me this cordial welcome to-day. The circumstance of my being received with unusual warmth in England is partly traceable to a certain indebtedness on my part; the learned corporations, especially the two ancient universities, had for years past expressed to me their desire to do me a special honour and to invite me to be present on the occasion. I have resisted this wish with a certain—perhaps not quite polite—perseverance. This kind of public ceremonial is not entirely to my liking, but I could not avoid it on this occasion. After the greatest corporations in England had bestowed

on me the highest honour in their gift, and that *in absentiâ*, which is quite unusual, I felt bound to express my gratitude. So I went to Cambridge and Oxford and was received there with all possible honour as Doctor of Sciences, of Common Law, &c. In one respect only I am very grateful to you for this reception, because you wished in this way to acknowledge to the English world of science and letters and to the English nation the honours conferred on one of your countrymen. I regarded my visit to England also as a kind of international mission, as I regarded my last year's visit to Russia. I think everyone should seek to strengthen and extend medical intercourse between nations as much as possible, and that I have succeeded in this in a higher measure than I ever ventured to hope is the highest reward I could have desired. I rejoice that you recognise this, and that you on your part also feel grateful for the reception that was accorded me. For, in honouring me, they at the same time wished to honour German work and the German nation. Gentlemen, we are all accustomed to work in the same way; perhaps like honours will one day fall also to you. So let us work on diligently. For my part, I am glad that I have brought back strength sufficient to enable me to work on with you yet a while." Both speeches were heard by the assembly standing, and were received with enthusiastic applause.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Weather.

SINCE the middle of March Manchester has been favoured with an unbroken spell of remarkably brilliant spring-like weather. According to the official returns the last six weeks have been practically rainless, the total precipitation during that time scarcely amounting to half an inch. The mean temperature has been exceptionally high for the time of year and the mean humidity of the air has been correspondingly low. Vegetation is at least a fortnight in advance of what is usual in Lancashire, and to ordinary minds everything seems to point to the likelihood of another summer like that of the year 1887. But although we in the city know how to appreciate this lovely weather, the farmers both in Lancashire and Cheshire have already begun to "croak" and to prophecy ruinously scanty crops because of the drought. The streams in this neighbourhoood are certainly very small, and, for the season of the year, unusually so; and there is no doubt that much of the highly drained land about here is of such a nature as to require almost constant irrigation if average crops are to be obtained. I hear, too, that the water-supply to the city and district is about to be curtailed because of the state of the Woodhead reservoirs. Although the Thirlmere scheme is in an advanced stage it is as yet far from being finished, and it is doubtful whether Manchester will be able to count upon a supply from that source during the present year.

Local Government Board Inquiries.

During the last fortnight Mr. Samuel Smith, C.E., has held two important inquiries in this neighbourhood, on behalf of the Local Government Board, in reference to the proposal of two sanitary authorities to initiate schemes for the precipitation and filtration of their sewage. The authorities concerned are the local boards of Droylsden and Gorton, both of which are on the confines of the city. In many respects the proposals of both authorities are similar. Pressure appears to have been brought to bear upon them by the River Conservancy Joint Committee to induce them to deal in some way with the sewage of their districts, which at present finds its way into the Mersey. Accordingly, both Droylsden and Gorton propose to construct a series of precipitation tanks, so as to get rid of the suspended matters, and afterwards to pass the sewage through filters constructed of sand and "polarite," this substance being supposed to possess exceptional properties as a purifier of sewage. The effluent, after passing through the filters, is to be turned without further treatment into the watercourses, and the sludge from the precipitating tanks is to be either pressed and dried or burnt in destructors to be erected for this purpose. Neither of the authorities proposes to adopt the plan of irrigation or application of sewage to the land, the chief reason alleged against that course being the great cost of land. In the event, however, of the Local Government Board's refusal to sanction the present proposal of the two sanitary authorities, they intimate their willingness to make arrangements for irrigation or, at any rate, for downward filtration through land. As both Droylsden and Gorton are on the boundaries of Manchester the corporation of the city was of course represented at both the inquiries, although counsel for the corporation did not actively oppose either of the schemes.

Small-pox Prevalence.

According to the returns of the medical officer of health small-pox still appears to linger about the city and its neighbourhood, twenty new cases having been removed to hospital in the course of the week ending the 15th inst. and fourteen more last week. It appears also that the disease still continues to spread in Salford, Oldham and other important towns in frequent communication with Manchester; and, having regard to the wide dissemination of infection in this neighbourhood, there is no valid ground for hoping that we have as yet approached the end of the epidemic. The city small-pox hospitals contain at the present time about 100 patients belonging to Manchester and about twelve more which have been sent to hospital from outside districts possessing no accommodation.

Chat Moss and the City Refuse.

At the last meeting of the City Council the cleansing committee brought up for confirmation a report, in which they recommend the council to purchase 2500 acres of land for the purpose of dealing with the excess of excremental refuse of the city which cannot be utilised at Carrington and is at present disposed of with difficulty elsewhere. Chat Moss is situated at a distance of about ten miles from Manchester. It has a frontage of many hundreds of yards to the Manchester Ship Canal and a turnpike frontage of at least two miles. There are also two railways running through the estate — the London and North-Western and the Cheshire lines. With the exception of about 200 acres of unreclaimed bog, the whole estate, consisting of 2500 acres, is agricultural land, and being very light is just the kind of soil that will profit by the application of the nightsoil of such a city as this. Of course there are those who believe that the price to be paid for the Chat Moss estate £200,000, is excessive considering then ature of the land and the purposes to which the corporation propose to apply it. Councillor Dr. Simpson, however, properly pointed out that "we ought not to look upon this question as one merely of pounds, shillings and pence. The land no doubt is the proper place for the disposal of the refuse of our great towns, and from a sanitary point of view especially we should hail with satisfaction the purchase of Chat Moss." This is not only the correct sanitary standpoint from which to view the proposal of our corporation, but it is a common-sense standpoint as well, and it is the one taken by the City Council, who unanimously adopted the proposal of the Cleansing Committee and resolved that application should forthwith be made to the Local Government Board for the necessary permission to borrow the money.

April 25th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The late Lord Derby.

BY the death of Lord Derby the medical profession has lost a sincere friend and well-wisher, a most generous contributor to University College, Liverpool, and to all the local medical charities. His name has appeared frequently in the pages of THE LANCET as having from time to time given excellent advice to medical students when presiding at the opening of the local and other medical schools, as also making wise suggestions to the managers of hospitals when attending in connexion with their support. His speeches contained such an amount of strong common sense that it was impossible to hear or to read them without benefit; and this fact was alluded to in an annotation which was published in THE LANCET on Dec. 27th, 1873, under the heading, "Lord Derby's Tonic." Lord Derby was a most regular attendant at the opening of the Medical Faculty of the Liverpool University College, and it must have been highly gratifying to him to have heard Mr. Mitchell Banks express, as he did some years ago, his obligations to a speech which the late Earl, when Lord Stanley, delivered at the University of Edinburgh shortly after Mr. Banks became a graduate. A general feeling of sorrow per-

vades all classes of the city, with which the Earls of Derby have been so long and intimately connected. In laying the foundation-stone of the present infirmary the late Earl observed that his father performed a similar duty to the second infirmary in 1820, and his grandfather to the first infirmary about the middle of last century. Flags half-mast high are waving over all the public and many private buildings, and on Thursday in Knowsley Church the grave will close over the remains of this most genial, able and respected nobleman.

The Weather: the Health of the City and Small-pox.

For weeks past the weather has been here, as elsewhere, unusually fine and dry with an almost entire absence of rain. The death-rate is rather high, but this is not due to any increase of small-pox, which would be almost *nil* except for imported cases. Of these there have been five in two days; it is necessary, therefore, to observe every precaution and not to relax any vigilance. There has been a good deal of talk about the unemployed in this city, a circumstance which, if it were true, would make one apprehensive of the results which are apt to accrue from starvation, such as typhus fever &c. But there is every reason to believe that the so-called want of employment was exaggerated, and even if work could not be obtained here it could be procured elsewhere. It is at least a grave question whether reduced wages causing a probable reduction of expenditure in the public-house are not an advantage so far as the health of working men is concerned.

April 25th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Opening of a Public Park in Newcastle.

A NEW park and recreation-ground was opened in Newcastle last Saturday. It is the gift of Mr. Wm. D. Cruddas, a partner in the firm of Sir Wm. G. Armstrong, Mitchell and Co. Mr. Cruddas' gift is all the more valuable as it is situated in a densely crowded district and would ere long have been built on and lost if it had not been secured for the purposes of health and recreation. Newcastle is now well provided with parks. At the east end we have three, and by this addition we now have three also at the west end. At the north end we have the magnificent Town Moor (on which a belt of trees is now being planted), which is to all intents and purposes a public park.

Opening of a Public Park at Coldstream.

Last week there was opened by the Earl of Home (the donor) a public park for the use of the inhabitants of Coldstream. The gift is a very valuable one and the occasion was observed as a general holiday.

Small-pox in the North.

The last report states that there are now nine cases in South Shields Hospital. The disease does not appear to be spreading there to any extent. The hospital authorities have only accommodation for fourteen patients, but steps are being taken to obtain further accommodation should it be needed. A fatal case is reported from Durham, where the disease still lingers. Cases are also reported in the Weardale district and in some of the colliery districts in Northumberland and Durham, but in Newcastle small-pox appears to have disappeared.

Bequests to Newcastle Charities.

The late Mr. J. A. Williamson, solicitor, of St. Nicholas Chambers, Newcastle, left by will to the Royal Infirmary, Newcastle, £100; to the Convalescent Home, £50; to the Fleming Memorial Children's Hospital, £50; to the Blind Institution, £50; to the Cripples' Home, Wallsend, £50; to the Deaf and Dumb Institution, £50; to the Village Homes, Whitley, £50; and to the Little Sisters of Mercy, Newcastle, £50.

Newcastle-on-Tyne, April 26th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Aberdeen University Medical School.

THE summer session commenced on April 17th, with a fairly large number of students. The ordinary work of the classes was at once assumed. There are some rearrangements of the classes to suit the requirements of the five years course.

Health of Aberdeen.

During the past week 9 cases of measles, 6 of scarlet fever, 2 of diphtheria, 2 of erysipelas and 1 each of typhoid fever and of whooping cough were notified in Aberdeen.

April 26th.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Royal College of Surgeons.

AN election for a Member of Council, vacant by the decease of Professor Rawdon Macnamara, will be held on Tuesday, May 2nd. The following will be candidates: Messrs. Humphrey Broomfield, Charles Coppinger, John Cranny and John Lentaigne.

Cork Water-supply.

A special meeting of the Waterworks Committee was held last Monday to consider the condition of the water-supply to the city and the military barracks. The committee had also before them analyses of various samples of the city water recently reported on by the city analyst. Two of them taken from the mains in different parts of the city were described one as of "good" and the other as of moderate quality of the first class—that is, of the highest standard recognised in the United Kingdom, and therefore suitable for potable and domestic purposes. It was resolved, "That, in view of a possible outbreak of cholera, we request the Public Health Committee to call upon the Local Government Board to exercise the powers which they possess, but which do not belong to the corporation, to compel the Macroom Board of Guardians to prevent any possible pollution of the river at Macroom." Instructions were given for a constant inspection of the river by the sanitary staff to prevent, as far as possible, cattle entering the river and other possible sources of contamination. A report by the city engineer on an improved system of filtration will shortly be presented.

The Belfast Ophthalmic Hospital.

From the surgical report submitted by Dr. J. Walton Browne at the annual meeting of this charity, held on April 17th, I learn that during the year just terminated 1092 cases of eye disease, 236 of ear disease and 235 of throat affections were treated in the extern department of the hospital, whilst in the wards 87 cases were received. During the year the surgeons thought it judicious to set apart two days in the week for the treatment of diseases of the throat and the new arrangement has been most successful. Clinical instruction had been given to a large class of students. The financial statement showed a balance due to the treasurer of £91 18*s.* 6*d.*

Close of the Winter Session at Queen's College, Belfast.

The winter session terminated last week at the Hospital and College. On Wednesday, April 19th, at the conclusion of the course of lectures on Midwifery and Gynæcology at Queen's College, Dr. Byers, who, owing to the illness of the Professor of Midwifery, has had charge of this class during the session, was presented with an illuminated address by the students.

Death of Mr. Musgrave, J.P.

I regret to announce the death of Mr. Musgrave, who for a lengthened period was a well-known practitioner at Lisburn. Mr. Musgrave, who was the son of a medical man, was a Fellow of the Royal College of Surgeons of Edinburgh. He began practice at Lisburn, where he was physician to the union workhouse, and in that town he enjoyed a lucrative practice and was greatly respected for his geniality and kindness, and for his sound medical advice. A few years ago he gave up practice and went to reside with his brothers at Drumglass House, Belfast, where he died on April 19th; he was buried on April 22nd at Lisburn.

Professor A. Macalister, M.D., F.R.S., Professor of Anatomy in the University of Cambridge, has had the honorary degree of Doctor of Laws conferred on him by the University of Glasgow. Professor Macalister, before he joined the University of Cambridge, was Professor of Anatomy in the University of Dublin.

Mr. Herbert Mooney has been appointed resident house surgeon to the National Eye and Ear Infirmary, Dublin, vice Dr. J. Mills, resigned.

April 26th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Health of Paris.

DURING the fourteenth week of the year there occurred at Paris 1436 deaths—a figure greatly superior to the mean of the corresponding season (1094) and also to the mortality of the preceding week (1296). What has caused this rise? Influenza, doubtless, despite the fact that only 20 deaths are attributed directly to that disease. But the considerable increase in the deaths (almost exclusively of adults and old people) attributed to pneumonia, bronchitis, congestion of the lungs &c. leaves no doubt that these latter affections are due to influenza. Thus the deaths from acute bronchitis reached 56 (instead of 34 in the mean); chronic bronchitis, 68 (mean 43); broncho-pneumonia, 105 (mean 35); pneumonia, 137 (mean 67); and pulmonary congestion, 71 (mean 24). The deaths from pleurisy remain about stationary. Seventy-four aged persons are said to have succumbed to senile debility; the excess (42) over the average is due to influenza. Phthisis killed 233 persons (mean 210), and cardiac affections 72 instead of 60. Scarlet fever and diphtheria with mortalities of 4 and 34 maintain the average; whooping-cough caused 16 instead of 5 deaths, whilst measles have diminished. But the strangest sanitary phenomenon to record is the appearance in our midst of a disease of which the majority of French practitioners are profoundly ignorant—I mean typhus fever. Since the Crimean war, when cases occurred at the Val-de-Grâce Military Hospital, no example of it had been seen in France until the present epidemic revealed itself. It appears that for the last two months typhus fever has prevailed at Lille, having broken out at the prison, which is overcrowded, containing, as it does, 500 instead of 170 prisoners. The patients were drafted into the general hospitals, no pretence of isolation being attempted. At the instance of the medical staff a pseudo-isolation was instituted, only a simple corridor separating the infected from the uninfected patients and the same *personnel* being employed for both classes. One of Professor Leloir's pupils took the disease, but recovered, whilst a man admitted for sciatica was infected and died. A certain number of prisoners ill of the malady were released and were shortly afterwards admitted into hospital. Some of these individuals most likely found their way to Paris and there communicated the disease. On March 29th Dr. Sapelier reported the presence of typhus fever at the poor-house of Nanterre, where the cholera epidemic of last year first made its appearance. These patients hailed from the depôt of the Paris Prefecture of Police. About the 1st inst. some cases occurred at the Hôtel Dieu. On the 2nd inst. the depôt was evacuated and disinfected. A few cases now occurred at the Prison de la Santé. These were at once isolated and placed under tents and the prison infirmary was disinfected. The nucleus of the epidemic was evidently the depôt, which, receiving daily 400 or 500 persons, is said to be in a deplorably insanitary condition. Of the 26 cases at Nanterre, occurring from March 20th to April 4th, 24 came from the depôt and 11 died. When the epidemic broke out at the Santé hospitals the staff thought it had to deal with influenza, and it was only some time later that the true nature of the malady was discovered. All the 13 typhoid fever patients at the Hôtel Dieu came from the depôt. Two have died and the rest are, according to M. Lancereaux, expected to recover. This gentleman asserts that this winter there were six men, seven women and two children ill with typhus fever at a small *asile* at Etrépagny, and the disease was communicated, after the epidemic had lasted a fortnight, to a curate and some male and female nurses. The first to be attacked at the establishment were tramps and the symptoms were typical. Inquiry appears to fix the origin of the epidemic at the Paris depôt as due to the admission on March 10th of a man who had travelled on foot from Lille *viâ* Amiens. Falling ill there, he was admitted to the Hôtel Dieu under Dr. Bucquoy on the 13th. He infected a ward clerk and also a neighbouring patient. In passing through Amiens the man had slept at the *asile de nuit*, where some cases have been noted. At the Charité there have been two cases and one at the Necker Hospital in M. Rendu's wards. Some cases have been seen also at the Tenon and Bichat Hospitals. One case (not in hospital) is reported from the Rue Jean-Jacques-Rousseau, the patient—a woman—dying. It is certain that if the disease had been diagnosed earlier the epidemic would have been more limited in its diffusion; but when such an authority as Dr. Dujardin-Beaumetz frankly tells his colleagues of the Academy of Medicine that he had never, until the present time, seen a case of typhus fever, some delay in arriving at a diagnostic conclusion is excusable. But what is inexcusable is the existence of such a dangerous fever nest as the depôt in a town like Paris; and it is incomprehensible how the presence for two months of the disease at a considerable centre like Lille should not have been reported at once to the sanitary authorities. M. Bergeron affirms that the Comité d'Hygiène Publique de France was never warned of the state of affairs at Lille; but it is said that the Lille practitioners did report officially to the Ministry of the Interior, that department having apparently taken no notice of the warning. M. Guérin remembers how Pelletan was years ago reprimanded and temporarily cashiered for having reported an epidemic at the Bicêtre Asylum. Are French hospital physicians apprehensive of a similar fate? It is satisfactory to know that the typhus fever epidemic is subsiding.

A Protest.

Amongst the martyrs to duty who have contracted typhus fever whilst attending to the victims of the epidemic treated at the Hôtel-Dieu we must unfortunately count one of Dr. Bucquoy's ward clerks named Lallemand. Directly the symptoms declared themselves the poor fellow was isolated in a special ward and waited upon by a special *personnel*. A week later, by order of the authorities and without any notice to Dr. Bucquoy or his *interne*, M. Lallemand was transferred across the river to the Annexe de l'Hôtel-Dieu—in other words, the building known to our fathers as the Hôtel-Dieu. Here he was placed in the common typhus fever ward in the company of rogues and vagabonds hailing from the Dépôt of the Prefecture of Police, where the epidemic first devoloped. This cruel and inconsiderate measure has not been allowed to pass unnoticed, for the sufferer's comrades at the Hôtel-Dieu have addressed to the Assistance Publique an indignant protest. The error, it is only fair to state, was in part repaired, for the poor young fellow died in a separate ward of the Annexe.

French Surgical Congress.

The next session of this body will be held in Paris during the week commencing on the third Monday in October, 1894, the questions to be discussed being the Etiology and Pathogenesis of Cancer and the Surgery of the Spinal Column. The new President is Professor Tillaux and the vice-chair will be occupied by M. Alphonse Guérin.

Dr. Dujardin-Beaumetz's Treatment of Obesity.

For the treatment of obesity in a person whose heart and arteries are sound, the above-named physician recommends the following method:—Every morning a general body-sponging with hot eau-de-cologne and water, followed by dry rubbing and massage. A tumblerful of purgative water is then administered. At the end of each meal a dessert-spoonful of the following solution is swallowed: 15 grammes of iodide of potassium and 250 grammes of water. The undermentioned regimen is to be rigorously observed: First meal at 8 A.M., a cup of chocolate and 20 grammes of bread. Second meal, two eggs, or 100 grammes of meat; 100 grammes of green vegetables or salad, 15 grammes of cheese, a little fruit, 50 grammes of bread, one glass and a half of liquid (a light white wine with Vichy water). Third meal at 7 P.M., no soup, 100 grammes of meat, 100 grammes of green vegetables or salad, 15 grammes of cheese, fruit, 50 grammes of bread, one glass and a half of liquid (white wine with Vichy water). No drinking between meals, no tea, coffee, cognac or other alcoholic beverage. Plenty of exercise in the open air.

Paris, April 19th.

MEDICAL TRIAL.

CONCERNING THE SALE OF A MEDICAL PRACTICE.

THE remitted action of Needes and Wallace *v.* Wiles came before Judge Bayley and a jury at the Westminster County Court on April 24th. This was an action brought by the plaintiffs, medical transfer agents, of Buckingham-street, Strand, against Mr. Wiles, M.R.C.S., of Belmont, Bowes-park, to recover £37 10*s.*, being commission for disposing of a medical practice. In August, 1892, the defendant was anxious to dispose of a practice in the Mile-end-road for

£600. The plaintiffs advertised it in THE LANCET as "suitable to a bachelor desirous of making money." Mr. Dwyer purchased the business for his son upon the condition that the defendant's representation that the practice brought in an average of £537 per annum was correct. An accountant went through the books and found the average was £537, and Mr. Dwyer wired to the defendant saying he would complete the purchase, but by that time the practice had been sold to someone else. The plaintiffs now claimed 5 per cent. on the first £500, 2½ per cent. on the last £100 and £10 bonus, the terms agreed upon by the defendant. The defence was that the business was put into the hands of several agents and by the time that Mr. Dwyer wanted to buy the practice it was already sold. Mr. Scarlet contended on behalf of the plaintiffs that there was an implied contract to hold the matter open until an accountant had been through the books. The jury gave a verdict for the defendant, and his honour gave judgment without costs.

Obituary.

HUGH DRYDEN BUCHANAN, M.B., C.M. GLASG.

THE death from pneumonia of Dr. H. D. Buchanan of Thirsk occurred on April 14th. He was the eldest son of Dr. J. H. Buchanan, J.P., of Sowerby, Thirsk—a well-known and much-respected physician. Dr. Dryden Buchanan graduated in medicine at Glasgow in 1885, after completing his studies at the Glasgow and London medical schools. In the same year he joined his father as colleague in Thirsk and Sowerby, and from the beginning of his practice there his medical work has been well done and his popularity has been rapidly extending. During his student days and in the eight years of his life as a practitioner he was always actively interested in very good work. His funeral in Sowerby churchyard was attended by over 500 friends, and the universally expressed sorrow shows how fully he had gained the affection of the people of his district.

DR. MACGAVIN,
OF PARIS.

THERE died in Paris on the 19th inst. the *doyen* of British practitioners in that city. The cause of death was pneumonia, which proved fatal after a week's illness. Dr. MacGavin had practised in Paris for considerably over thirty years, and the genial presence of the handsome and upright old physician, who, at the ripe age of seventy-two, has been called away, will be greatly missed by both the rich and poor members of the British colony. A large concourse of friends, both lay and professional, attended the funeral on Friday, April 21st, at the Embassy Church, in the Rue d'Agues-seau, where the chaplain—the Rev. H. E. Noyes, D.D.—delivered a most impressive address, a few extracts from which may prove interesting. "There can be little doubt but that to most of us it seemed that Dr. MacGavin was a man we could not easily spare. He has been a prominent figure in this great city for nearly half a century. At first a careful student of disease in the great hospitals and a valuable contributor to the medical press in different parts of the world, and then for a long period an able and successful practitioner. The high value which was set upon his extended knowledge and ripe experience is witnessed by the almost universal sympathy of his *confrères* in the city and their presence in such goodly numbers at this last sad office to-day. Only one thing would I testify here. He had that trait in his character which has ever been found in our greatest physicians—he was a God-fearing man. There is one class amongst us who will more than all miss his kind offices—the struggling and poor, both of those who have been reduced in circumstances and of the working class. These ever found in Dr. MacGavin a generous friend. He placed his skill at their service without fee or reward, often giving much of his valuable time and even providing the necessary medicines. He was not ostentatious in his charities, and it was only in unexpected ways that one heard of the good work he had done. The kindly influence he exercised will not soon be forgotten. There was nothing of insular prejudice about Dr. MacGavin. He had a large heart. It was not only the English who were drawn to him, but French, Americans, Australians and others who sought his skill and were recipients of his kindness. He was one who seemed to see in every man a brother, and especially in the man who was in need. The Government of the country which he had made his home awarded him one of the most coveted decorations. This gift was for a brave struggle with disease and death at the time of a cholera visitation."

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary meeting of the Comitia was held on Thursday, the 27th inst. The following Members were elected Fellows of the College:—Frederick Willcocks, M.D.Lond., London; Arthur Thomas Myers, M.D.Camb., London; Walter Spencer Anderson Griffith, M.D.Camb., London; Paul Morgan Chapman, M.D.Lond., Hereford; Alfred George Barrs, M.D.Edin., Leeds; Hubert Montague Murray, M.D. Lond., London; Thomas Harris, M.D.Lond., Manchester.

Messrs. Henry Albert Caley, M.D. Lond.; Bertrand Edward Dawson, M.B.Lond.; George Francis Angelo Harris; Percival Horton-Smith, M.A., M.B. Camb.; Robert Murray Leslie, M.A., M.B.Edin.; Chichester Gould May, M.A., M.D. Camb.; Benjamin Arthur Whitelegge, M.D.Lond., having passed the required examination, were admitted as Members. Licences were granted to 133 candidates who had passed the recent examinations.

The College Seal was set to a lease of Great Ashlyn's Farm for ten years at a rental of £270 per year. Letters were read on formal business from the Secretary of the Royal College of Surgeons, and the reports of the Committee of Management and of the Laboratories, Finance and Library Committees were received and adopted. The course of laboratory instruction delivered at the London Hospital Medical College was recognised as fulfilling the requirements of the regulations for the Diploma in Public Health. The City of London School, Clifton Laboratory, Hull Royal Institution and Swansea Technical College were recognised as institutions for instruction in chemistry, and Reading University Extension College for instruction in chemistry and biology. Other regulations affecting the admission of candidates to the various examinations and a revised list of hospitals and schools as recommended by the Board of Management for recognition by the College were also adopted.

The judgment of the Court of Queen's Bench in the case of the Royal College of Physicians *v.* the General Medical Council was laid on the table, and it was unanimously agreed that a piece of plate, suitably inscribed, be presented to the Registrar, Dr. Edward Liveing, in acknowledgment of his most efficient services during the conduct of the case.

Medical News.

EXAMINING BOARD IN ENGLAND OF THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the First Examination of the Board at the quarterly meeting of the Examiners in the subjects indicated under the Five Years' Regulations:—

Chemistry and Physics (Part I.).—George Paul Anning, Leeds; Albert Ernest Cotterill, Manchester; Henri Oscar Pomme de Mirimonde, Leeds; David Richard Edwards, Liverpool; William Alexander Ferguson, Manchester; Frederick Gray Flood, Charing-cross; George Baynton Forge, London; William George Higgins, Middlesex; Ernest Hugh Kitchin, Leeds; William James Lord, Bristol; Arthur Martin-Leake, Pharmaceutical Society of Great Britain; Norman Gerald Meade, Leeds; David Vernon Muller, Charing-cross; Thomas Shepherd Novis, London; Arthur Harry Parker, Charing-cross; James Rigby, London; John Vans Agnew Bruce Robertson, Leeds; Matthew Edmund Smallwood, Liverpool; Sydney Duke Turner, Epsom College; Herbert John Walker, King's College; Harry War Bennett Walling, Guy's; John William Watson, Bristol; George Winn, London.

Practical Pharmacy (Part II.).—John Beresford Christian, St. George's; John Holmes, Yorkshire College, Leeds; Frank Mannington, Middlesex; Arthur Riley, Westminster; Stanley James Reeve Shorto, Private Study.

Elementary Biology (Part III.).—Sydney Herbert Adams, London; Joseph Bartlett Addison, St. Mary's; George Paul Anning, Leeds; Chas. John Aris, Charing-cross; Walter Biggar Bannerman, London; Horace John Maurice Drummond Sale Barker, Guy's; Eustace Robert Barton, University College; Ferdinand Stanley Batchelor, Guy's; Hugh Stanley Beadles, St. Bartholomew's; Kenneth de Risley Bell, King's College; Hugh Bernard-Onraët, Guy's; Dunstan Brewer, St. Mary's; Frederick Thomas Butler, Manchester; Harry Mills Cade, Westminster; John Barton Cautley, St. Bartholomew's;

Herbert Hilton Cheesman, Westminster; Francis William Chesnaye, St. George's; Stanley Cornell Clapham, Guy's; Reginald William Clark, London; James Edward Collins, London; Albert Ernest Cotterill, Manchester; John Samuel Cousins, Guy's; Henry Joseph Crossley, Manchester; Hamilton Maxwell Cruddas, St. Bartholomew's; John Dalebrook, St. Bartholomew's; Robert Davey, London; John Davies, London; Everard Inseal Davies, Guy's; Howard Henry Congreve Dent, Birmingham; Sidney Smalbroke Depree, Liverpool; John Dixon, Guy's; Thomas Henderson Dugon, London; Malcolm Goodworth Dyson, St. Bartholomew's; David Richard Edwards, Liverpool; Edgar Steele Edwards, Bristol; Edward Evans, Guy's; Frederick Hudson Evans, King's College; Arthur Thomas Falwasser, Guy's; William Alexander Ferguson, Manchester; Frederick Gray Flood, Charing-cross; George Baynton Forge, London; Harry Percival Foulerton, St. George's; William Day Fraser, University College; William Anderson Fuller, Guy's; Charles Hilton Furnivall, St. Mary's; Charles Berkeley Gervis, University College; Bernard Bradly Gough, Guy's; William Pennington Grellet, Guy's; John Blake Hall, Leeds; Herbert George Harris, St. Bartholomew's; William John Saundry Harvey, Guy's; Francis Harold Rodier Heath, Guy's; Harry Williams Henshaw, St. Bartholomew's; Edward Septimus Earnshaw Hewer, St. Bartholomew's; Geoffrey Charlstrom Hobbs, St. Bartholomew's; John Edward Hodgson, Manchester; John Christiano Hollocombe, St. George's; Robert Hughes, Manchester; Alfred John Hull, Guy's; Benjamin Isaac, Guy's; Thomas Dinnen Jago, St. Bartholomew's; Samuel Percy Johnson, Birmingham; William Johnston, Charing-cross; John Henry Jones, Guy's; Lewis Jones, St. Bartholomew's; Thomas Caldwell Litler Jones, St. Bartholomew's; Augustus Kinsey-Morgan, Guy's; Harold Steele Langdon, Middlesex; Richard Harte Lloyd, S. Bartholomew's; Francis Frederick Lobb, St. Mary's; John Reginald Long, Westminster; James Adrian McComb, London; Cecil Wimot Mainprise, St. Bartholomew's; Antonius Joseph Manasseh, Leeds; Henry Rupert Marsh, Guy's; John Martin, University College; Marmaduke Stephen Mayon, King's College; Norman Gerald Meade, Leeds; Charles Cyril Morgan, St. Bartholomew's; Charles Henry Mossop, Guy's; John Charles Murray, St. Bartholomew's; Thomas Shepherd Novis, London; Josiah Oldfield, St. Bartholomew's; Eugene John O'Meara, Guy's; Richard Sidney Osborne, St. Mary's; Algernon Fountain Page, St. Bartholomew's; Edward Francis Palgrave, St. Bartholomew's; John Edwin Ford Palser, London; Arthur Heaword Prichard, University College; Francis Lionel Provis, St. Bartholomew's; Remus William John Radley, Guy's; Walter Rains, Manchester; Horace Clare Regnart, Guy's; Harry Melville Rees, Manchester; Arthur Riley, Westminster; Nelson Joseph Roche, Charing cross; Frank Herbert Rose, Bristol; John Geddes Scott, Westminster; Arnold Ward Shedden, Birmingham; Harold Simson, Guy's; Joseph Oliver Stevington, St. Mary's; Matthew Edmund Smallwood, Liverpool; Edwin Charles Smith, Burmingham; George Arthur Whitworth Spear, St. Bartholomew's; William Townsend Storrs, St. Bartholomew's; James Templeton, St. Mary's; Michael Harris Thornely, Guy's; Walter John Pearce Tripp, Bristol; Herbert John Walker, King's College; John Basil Walters, Guy's; Henry Beckies Gall Walton, St. Mary's; Montague Harold Way, Guy's; Frank Edward Wayte, Manchester; Charles Peterson Weekes, Guy's; Warren Guy Westcott, St Mary's; Mervyn Turberville Whitehouse, Birmingham; Robert Garden Whiting, St Bartholomew's; Ernest Reginald Wild, Leeds; Percival Wood, St. Bartholomew's; Ernest Dixon Wortley, St. Bartholomew's.

Elementary Anatomy (Part IV.).—Sydney Herbert Adams, London; Joseph Bartlett Addison, St. Mary's; Herbert James Aldous, King's College; Arthur William Aldridge, Birmingham; Herbert Thomas Marmaduke Alford, St. Thomas's; William Anderson, London; George Paul Anning, Leeds; Alfred George Henry Anthonisz, University College; Frank Atthill, Charing-cross; Sydney Ernest Aubrey, Charing-cross; Bernard Edward Granville Bailey, St. Bartholomew's; Alfred Eaton Baker, Middlesex; Walter Biggar Bannerman, London; Eustace Robert Barton, University College; Ferdinand Stanley Batchelor, Guy's; Vaughan Bateson, Leeds; Carol Luther Batteson, London; Hugh Stanley Beadles, St. Bartholomew's; James Buxtable Bendle, St. Mary's; Charles Henry Benham, University College; Hugh Bernard-Omrœt, Guy's; Charles Dudley Bishop, Charing-cross; Henry Bond, St. Bartholomew's; William Quinton Bown, St Mary's; Dunstan Brewer, St. Mary's; Arthur Hubert Broadribb, St. Mary's; John Buckley, Manchester; Alfred Burn, St. Mary's; Edward Payton Burns, Birmingham; Frederick Thos. Butler, Manchester; Harry Mills Cade, Westminster; John Burton Cautley, St. Bartholomew's; Ernest Alfred Samuel Cawston, Guy's; Harold John Chater, St. Mary's; Herbert Hilton Cheesman, Westminster; Francis William Chesnaye, St. George's; John Beresford Christian, St. George's; Stanley Cornell Clapham, Guy's; Reginald William Clark, London; James Edward Collins, London; Rowland William Collum, Charing-cross; samuel Henry Gilbert Cory, St. Mary's; Albert Ernest Cotterill, Manchester; John Samuel Cousins, Guy's; Alfred Cronsen, Guy's; Henry Joseph Crossley, Manchester; Hamilton Maxwell Cruddas, St. Bartholomew's; Robert Davey, London; John Davies, London; Timothy Howell Davies, Middlesex; Everard Inseal Davies, Guy's; Howard Henry Congreve Dent, Birmingham; Avery Wynn Dickson, St. Bartholomew's; John Dixon, Guy's; James Alexander Dobson, Birmingham; Percy Clarence Douglass, St. Mary's; Ernest Frederick Charles Dowding, St Thomas's; Thomas Alexander Dowse, Charing-cross; Thomas Henderson Dugon, London; Malcolm Goodworth Dyson, St. Bartholomew's; Edgar Steele Edwards, Bristol; John Maltby Edwards, Charing-cross; Edward Evans, Guy's; Evan Evans, Guy's; Frederick Hudson Evans, King's College; Christian Beverley Fairbank, University College; William Joseph Fanning, St. Thomas's; Robert Fell, Guy's; Reginald John de Gale Ferguson, University College; William Alexander Ferguson, Manchester; William Richard Flint, St. Mary's; Frederick Gray Flood, Charing-cross; George Baynton Forge, London; Ernest Lionel Forward, St. Thomas's; Percy Foster, Charing-cross; Harry Percival Foulerton, St. George's; James Bernard Cualmers Francis, Westminster; William Anderson Fuller, Guy's; Charles Hilton Furnivall, St. Mary's; Charles Berkeley Gervis, University College; Thomas Latimer Glanville, Charing-cross; John George Glasgow, St. Thomas's; John Abel Glover, Guy's; Arnold Saxty Good, St. George's; Bernard Bradly Gough, Guy's; Francis Ley Augustus Greaves, St. Thomas's; William Robert Green, Guy's; William Pennington Grellet, Guy's; John Blake Hall, Leeds; Stratford Dondes Tourmache Halliday, Middlesex; William Wilfrid Halsted, St. Thomas's; William Edwin Harris Hancock, Bristol; George Hardwicke, Leeds; Herbert George Harris, St. Bartholomew's; William Bradshaw Harris, St. Mary's; George Montagu Haraton, Charing-cross; William John Saundry Harvey, Guy's; William Augustus Hayden, St. Mary's; Francis Harold Rodier Heath, Guy's; Harry Williams Henshaw, St. Bartholomew's; Edward Septimus Earnshaw Hewer, St. Bartholomew's; Geoffry Charlstrom Hobbs, St. Bartholomew's; John Edward Hodgson, Manchester; John Holmes, Leeds; Richard Rothwell Horley, Middlesex; James Gerald Fayrer Hosken, St. Bartholomew's; William St. Aubyn Fortescue Hubbard, Charing-cross; Robert Hughes, Manchester; alfred John Hull, Guy's; George Hutcheson, London; Benjamin Isaac, Guy's; Hugh MacDonald Caunter Jackson, St. George's; William Taylor Jackson, Manchester; Thomas Dinnen Jago, St. Bartholomew's; Harold Henry Jamieson, St. George's; Rance Drewsatt Johnson, Charing-cross; Samuel Percy Johnson, Birmingham; William Johnston, Charing-cross; George William Grey Jones, St. Mary's; John Henry Jones, Guy's; Lewis Jones, St. Bartholomew's; Thomas Caldwell Litler Jones, St. Bartholomew's; Nicolas Joseph Kendal, Birmingham; John Elds Kilvert, St. Thomas's; John William King, Charing-cross; Augustus Kinsey-Morgan, Guy's; Charles Llewellyn Lander, London; John Inman Langley, St. Thomas's; Cecil Pryor Lankester, St. Thomas's; Arthur George Leverton, St. Bartholomew's; Harold Samuel Libby, St. Thomas's; Francis Seymour Lloyd, St. Mary's; Richard Harte Lloyd, St. Bartholomew's; Francis Frederick Lobb, St. Mary's; James Ernest Long, Bristol; John Reginald Long, Westminster; William James Lord, Bristol; Charles Antony Lower, Guy's; James Adrian McComb, London; Frederic Percival Mackie, Bristol; Cecil Wimot Mainprise, St. Bartholomew's; Alexander John Malcolm, St. Mary's; Frank Mannington, Middlesex; Henry Rupert Marsh, Guy's; John Martin, University College; Bertram Sydney Osmund Maunsell, St. Bartholomew's; Richard Maxwell, London; Marmaduke Stephen Mayon, King's College; Norman Gerald Meade, Leeds; Edward Bergham Leslie Moore, University College; Percy William Moore, Guy's; Charles Henry Mossop, Guy's; David Vernon Muller, Charing-cross; John Charles Murray, St Bartholomew's; Richard Galway Murray, St. George's; Thomas Shepuerd Novis, London; Eugene John O'Meara, Guy's; Albert Osborne, St. Thomas's; Richard Sidney Osborne, St. Mary's; Algernon Fountain Page, St. Bartholomew's; Edward Francis Palgrave, St. Bartholomew's; John Edwin Ford Palser, London; Allan Chilcott Parsons, St. Thomas's; Gerard Lyne Parsons, Westminster; Thomas Pearson, Charing-cross; Frederick Garrett Peck, St. George's; Harrold John Pickering, St. Bartholomew's; George John Edward Pitman, University College; Arthur Heaword Prichard, University College; Francis Lionel Provis, St. Bartholomew's; Remus William John Radley, Guy's; Walter Rains, Manchester; Harry Melville Rees, Manchester; Horace Clare Regnart, Guy's; Ramsey Martyn Richards, St. Mary's; Arthur Riley, Westminster; Clive Riviere, St. Bartholomew's; Arthur Cecil Robinson, St. Thomas's; James Herbert Robinson, Charing cross; Frank Herbert Rose, Bristol; Edward Halford Ross, St. Thomas's; John Geddes Scott, Westminster; Charles Bernard Sells, Guy's; Henry Francis Shea, St. Thomas's; Arnold Ward Shedden, Birmingham; Harold Simson, Guy's; Matthew Edmund Smallwood, Liverpool; Edwin Charles Smith, Birmingham; Malcolm Arthur Smith, Charing-cross; George Arthur Whitworth Spear, St. Bartholomew's; Alfred Edward Stevens, St. Thomas's; Ernest Bruce Stevenson, St. Bartholomew's; William Townsend Storrs, St. Bartholomew's; Julian Taplin, Birmingham; Arthur James Tayler, King's College; John Lionel Tayler, St. Thomas's; James Templeton, St. Mary's; Michael Harris Thornely, Guy's; Sydney Duke Turner, St. Thomas's; Harry War Bennett Walling, Guy's; John Basil Walters, Guy's; Henry Beckies Gall Walton, St. Mary's; John William Watson, Bristol; James George Watt, Guy's; Montague Harold Way, Guy's; Charles Peterson Weekes, Guy's; Charles Herbert Welch, Bristol; Alfred Edmond Weld, Charing-cross; Warren Guy Westcott, St. Mary's; Harold Edward White, Birmingham; Henry Cadman Whiteside, Middlesex; Robert Garden Whiting, St. Bartholomew's; Basil Fenton Wingate, St. Mary's; George Winn, London; Robert Wilcox, Bristol; Charles Franks Winkfield, St. Bartholomew's; Richard Le Geyt Worsley, St. George's; Ernest Dixon Wortley, St. Bartholomew's.

UNIVERSITY OF CAMBRIDGE.—The following candidates have satisfied the Examiners in both parts of the examination in Sanitary Science:—

Lancelot William Andrews, Edward Harris Armitage, Donald Harvey Attfield, Charles Ernest Baker, Robert Atwood Beaver, Frank Richardson Blaxall, William Arthur Bond, John Francis Butler-Hogan, James Clarke, Herbert George Graham Cook, Marcus Robert Phipps Dorman, Howell Thomas Evans, Thomas Henry Geoffrey, John Henderson, John Henry Jenkins, John Lloyd Thomas Jones, William Wellington Lake, George D'Alton Nugent Leake, Thomas Morrison Legge, Charles Petre Lovell, Alexander Stewart Norman, David Valentine O'Connell, Felix Brannigan O'Flaherty, Ransom Pickard, George Rowell, Alexander Silcock, George Jackson Smith, Henry Cleveland Smith, Ernest Hugh Snell, Frederick Wilson Stansfield, Nasservanji Fakirji Surveyor, Alfred Whalley Waller, William Willis and William Henry Wieder.

SOCIETY OF APOTHECARIES OF LONDON.—The following candidates have passed in the subjects indicated below:—

Surgery.—A. E. Bodington, Cambridge University and Middlesex Hospital; B. W. Bono, H. H. L. Patch, A. G. Tribe, J. H. P. Vivian, and E. H. Worth, St. Thomas's Hospital; A. H. Bygott, Birmingham; J. E. H. Davies, London Hospital; J. N. D'Esterre, H. F. Kaland, and J. D. Seller, St. Mary's Hospital; W. R. Radwen,

Bristol; F. C. B. Harvey and A. E. Pryse, University College; W. D. Johns, Durham; A. N. V. Johnson, Royal Free Hospital; H. W. Lyle, King's College; R. W. Nesfield and E. Quayle, Manchester; R. B. Rees, Middlesex Hospital; A. Todd White, Guy's Hospital.

Medicine, Forensic Medicine and Midwifery.—F. J. Godwin, Charing-cross Hospital.

Medicine and Forensic Medicine.—A. D. Davies, London Hospital; E. J. Jennings, Edinburgh; H. R. Walker, King's College W. A. Jones, Bristol.

Medicine and Midwifery.—S. C. C. Fenwick and J. D. Seller, St. Mary's Hospital; J. A. Morgan, Charing-cross Hospital; I. Robinson, Yorkshire College, Leeds; R. W. Nesfield, Manchester.

Medicine.—A. J. Russell, London Hospital.

Forensic Medicine and Midwifery.—C. A. Davies, Manchester.

Forensic Medicine.—W. E. Barker, Manchester; W. R. Hadwen, Bristol; T. E. Smurthwaite, St. Mary's Hospital.

Midwifery.—G. H. Grace, St. Bartholomew's Hospital.

The diploma of the Society, entitling them to practise Medicine, Surgery and Midwifery, has been granted to the following gentlemen:—

Messrs. Barker, Bygott, D'Esterre, Ealand, Godwin, Hadwen, Harvey, Johnson, Patch, Russell, Smurthwaite, and White.

THE BUCHANAN PRESENTATION FUND.—A committee meeting in connexion with this Fund will be held at 5 P.M. on Tuesday, May 2nd, at 13, Old Burlington-street, when the committee will receive the report of the sub-committee appointed (1) to communicate with the Royal Society and (2) to take the necessary steps to have the medal made, and to take action thereon.

SMALL-POX IN BIRMINGHAM.—A subcommittee of the Health Committee have decided to recommend the building of a new hospital for cases of small-pox alone. It has been found that a large proportion of the fresh cases come from the area around the present city hospital, so that it is difficult to get complete isolation. There are now in the hospital eighty-eight patients with this disease, which has been steadily increasing during the last three weeks.

SURGEON-MAJOR JAMES R. ANDREW CLARK, the eldest son of Sir Andrew Clark, Bart., was married on the 20th inst. to Miss Lilian Margaret, second daughter of Robert Hopkins, Esq., J.P., of Tidmarsh Manor, Berks. The ceremony took place at St. Lawrence's Church, Tidmarsh, the Rev. J. J. Elkington, Warden of the House of Charity, Soho, and the Rev. A. H. Hopkins, brother of the bride, officiating. During the afternoon a large and distinguished company of wedding guests, amongst whom was the father of the bridegroom, were entertained at the Manor House, whilst the villagers were regaled in the park.

THE WORLD'S FAIR AND TRAINED NURSING.—Amongst the multifarious subjects to be included in the exhibits and demonstrations in connexion with the World's Fair, that of nursing will not be omitted. In order to further this useful art the medical director of the enterprise contemplates the maintenance of a hospital in which the more advanced theories of nursing will be demonstrated. The chief schools of medicine in America are united in the endeavour to raise to a yet higher standard the efficiency and usefulness of the beneficent work of skilful attendance on the sick, both in hospitals and in their own homes.

BEQUESTS AND DONATIONS TO HOSPITALS.—Sir Wm. Cunliffe Brookes has sent a donation of £500 to the Stockport Infirmary.—General Sir Henry Bates bequeathed £200 to St. Mary's Hospital, Paddington, and £100 to the Bexhill Branch of the Walton Convalescent Home.—The late Mr. William Loudon of Glasgow bequeathed £100 free of legacy duty, to the Royal Infirmary, Glasgow.—The treasurer of the Leeds General Infirmary has received £320, the amount allotted to that institution by the managers of the recent pantomime football match.—The late Miss Mary Henderson of Windsor-road, Southport, bequeathed £1000 to the Southport Convalescent Hospital.—Mr. Frederick Merrttens of Poynton Birches has sent a donation of £300 to the Convalescent Fund in connexion with the General Hospital for Sick Children, Gartside-street, and Pendlebury, Manchester.—The late Mr. William J. Palmer of Reading bequeathed £525, payable by ten annual instalments, to the Royal Berkshire Hospital.—Dame Frances A. Wilmot Horton, late of Sloane-street, Chelsea, bequeathed £50 each to the Victoria Hospital for Children and the All Saints' Eastbourne Convalescent Home.—The Clothworkers' Livery Company has sent a donation of £50 to the East London Hospital for Children, Shadwell.—The Fishmongers' Livery Company has made a grant of £105 to the Metropolitan Hospital, Kingsland-road.

MEDICAL MAGISTRATE.—Dr. Ralph Gooding of Blackheath has been made a Justice of the Peace for the County of London.

PRESENTATION.—On Thursday last Mr. Weldon C. Carter, M.D., L.R.C.P.Lond., M.R.C.S.Eng., senior house surgeon at the Royal Albert Edward Infirmary, Wigan, was presented with a handsome table lamp, bearing the following inscription: "Presented to Dr. Weldon C. Carter by the nursing staff of the Wigan Infirmary as a token of their esteem." Having been connected with the institution for a period of two years and eight months his leaving was thought a fitting occasion to show this appreciation of his courtesy and kindness.

UNIVERSITY OF MELBOURNE.—The "annual commencement" of this University was held on Saturday, March 18th, when the prizes were distributed to the successful students. The chancellor in his annual address stated that there had been an increase in the number of students at the matriculation examinations, and also in the number of students attending lectures during the past academic year. The chancellor, Sir Anthony Brownless, was presented by Professor Halford, dean of the medical faculty, with an address congratulating him on the honour of knighthood conferred on him since the last annual commencement. An illuminated address was also presented by the students.

NOTES IN PARLIAMENT.

Proposed Registration of Cycles.

IN the House of Commons next week the Marquis of Granby will bring to the notice of the Home Secretary the frequency of serious accidents caused by cyclists and invoke him to consider the advisability of proposing some scheme of registration for bicycles and tricycles such as obtains at present in Paris. Lord Granby is himself strongly in favour of some such scheme, thinking that it would act as a check upon reckless riders and contribute to the identification and punishment of offenders.

The Vaccination Question.

Several weeks ago the Home Secretary placed upon the orders of the House of Commons a notice for the introduction of the measure, promised by him early in the session, for the amendment of the Vaccination Act of 1867. The introduction, however, has not yet taken place.

Cholera Hospitals (Ireland) Bill.

In the House of Lords, on the 20th inst., this Bill passed through committee.

Food and Drugs (1875) Act.

Mr. Egerton asked the President of the Local Government Board whether the Government would grant a Select Committee to inquire into the whole subject of the working of the Food and Drugs Act. Mr. H. Fowler reminded the hon. member that a Bill for the Amendment of the Sale of Food and Drugs Act was now before the House, and the Government would probably concur on its second reading, provided it be referred to a committee of the whole House.

The Liquor Bill.

On the 20th inst., in answer to a question put by Sir G. Russell, Mr. Gladstone said the time had not arrived for the Government to form any judgment as to whether it would be able to proceed with the Liquor Traffic (Local Control) Bill this session. Of course, due notice would be given with respect to that or any other measure announced in the Queen's Speech.

Sweating and Outworkers.

Mr. E. H. Bayley asked the Home Secretary whether, with a view to prevent sweating, he would cause lists of outworkers in certain trades to be furnished to the medical officer in each district.—Mr. Asquith said such lists were kept at the premises of the occupiers of factories and workshops affected by the order and were open to the inspection of the medical officers of the sanitary authorities. In November last a circular had been addressed to all urban sanitary authorities calling their attention to the order and requesting their officers to make frequent examination of the lists.

Cellar Bakeries.

This question also was made the subject of inquiry by Mr. E. H. Bayley, who drew attention to the report of Dr. Waldo, medical officer of St. George-the-Martyr, Southwark, in which the existence of badly ventilated and otherwise unwholesome bakeries was mentioned.—Mr. Fowler said his attention had been drawn to the report referred to, in which it was stated that no less than twenty-one underground bakehouses existed in the parish referred to. These places appeared to be in a deplorable condition, which, in respect of ventilation, could be dealt with by proceeding against the occupiers. Further, the Act of 1883 expressly provided for penalties in any case where a court of summary jurisdiction was satisfied, on the prosecution of an inspector or sanitary authority, that a place used as a bakehouse was unfit for the purpose. He stated that the sanitary condition of bakehouses was provided for in the Public Health (London) Act.

The Water of Leith.

In the House of Commons, on April 24th, amongst the private bills

was that entitled the Water of Leith Purification and Sewerage Bill, which was read a third time.

The Dublin Drainage Scheme.

Mr. Campbell-Bannerman, replying to Mr. M. Healy, said that by a return recently made to Parliament it appeared that there was no dispute with the corporation of Dublin and the military authorities with regard to the way in which the scheme would affect the healthiness of the Pigeon-house Fort. The question had been referred to the Army Sanitary Committee, and it would be premature, said the right hon. gentleman, to assume that any demand would be made for compensation in respect of that building, though it was necessary that the proposed scheme should have the sanction of the Secretary of State.

The Railway Servants (Hours of Labour) Bill.

This Bill, having passed through a standing committee, was considered in its amended form, and a new clause, which was proposed by Sir J. Gorst, gave rise to a lively discussion. The clause declared that the hours of labour for signalmen beyond eight hours and for other servants beyond ten were excessive. Mr. Mundella, Sir J. Fergusson and other members opposed the clause, which was negatived by 257 against 71. An adjournment took place with regard to other amendments.

Opium Dens in Bombay.

Mr. G. Russell, in answer to a question put by Mr. Caine to the effect that a writer had found large numbers of men and women smoking in opium dens in Bombay, said that orders already existed for the prohibition of opium consumption on the premises of any licensee. It had, however, been thought desirable that the law should be strengthened so as to enable legal steps to be taken for suppressing private opium saloons.

Cholera.

Mr. Fowler, replying to a question put by Mr. T. Robinson as to the desirability of granting a contribution from the national exchequer to local sanitary authorities who might be threatened with an invasion of cholera, said a reply had already been given by the Secretary to the Treasury to a similar query, and he directed the attention of his questioner to a statement made by the Chancellor of the Exchequer on the previous evening on the same subject. The right hon. gentleman, moreover, in answer to another question, expressed his willingness to receive a deputation on the matter, though he confessed he had nothing further to say.

Vaccination Prosecutions.

In the House of Commons on Thursday Mr. Picton brought to the notice of the Home Secretary the case of William Chittenden, of South Ashford, Kent, who has been fined eleven times for contravening the Vaccination Acts.—Mr. Asquith, after explaining that Chittenden has become liable for fines amounting in the aggregate to nearly £15, said he regretted very much these repeated prosecutions for the same offence. He would, however, be repealing the law if he remitted the penalties. The bill on the subject which he had promised would be introduced as soon as possible.

Medical Officers and their Salaries.

On Thursday Dr. Farquharson asked the Lord Advocate whether it was in accordance with the law that county councils should assess police burghs for salaries and other expenses of their medical officer and sanitary inspector.—The Lord Advocate, in reply, stated that these salaries and expenses were paid out of the General Purposes Rate to which police burghs contributed their share. The burghs were, in his view, entitled to the supervisory services of the county officers equally with the rural districts.

DEATH CERTIFICATION.

THE Select Committee of the House of Commons on Death Certification resumed its inquiry on Friday, the 21st inst., under the presidency of Sir Walter Foster.

Dr. GRIMSHAW, Registrar General for Ireland, examined by the Chairman, said he had held the office for thirteen years, and that during that time he had been engaged in statistical and sanitary inquiries. His duties included the superintendence of medical, agricultural, emigration, criminal, judicial, railway and other statistics. He had given special attention to vital statistics. Death registration in Ireland commenced under the Act of 1863, and it was amended by the Act of 1880. The registrars were the dispensary medical officers who chose to accept the office. A few of them refused the office, but there were not fifty non-medical registrars in Ireland. The superintendent registrars were connected with the Poor-law service. They were clerks of the unions. He would consider it a great misfortune should the two services be separated. One result of having medical men for registrars was that the certificates of death were more reliable as to the causes of death than they would be were the registrars non-medical. Witness submitted to the Committee the form of certificate originally in use and the form of that now in use. As to the former he said that the medical man objected to being the informant, and it was altered to meet the objection. Very often the medical man did not know whether the death had actually occurred, although he might have been aware that death was probable. He would give an illustration. Dr. Lyons, once a Member of the House of Commons, was in practice in Dublin. He was attending a man who was very ill. The patient suffered from paroxysms and Dr. Lyons thought it not improbable that he would die in one of them. He saw the patient upon a particular day. On the following morning the friends of the man called at the house of Dr. Lyons, and, stating that he had died, asked for a certificate of the cause of death. It so happened that Dr. Lyons had left his house prior to the arrival of the friends. He had, in fact, gone to the residence of the patient, and there he found him alive and sitting up in bed. The object of the friends in stating that he was dead and in asking a certificate was to get the insurance money. Under the Act of 1880 the medical practitioner in attendance was not required to send the certificate to the registrar, but to hand it to some person qualified to act as informant, and that person was to carry it to the registrar. It was perfectly true that a great deal of confusion existed in the minds of medical men as to what was a primary and what was a secondary cause of death, but he did not regard the terms as objectionable if properly used. He did not know any way in which they could be amended so as to avoid the confusion. If they could get a specific cause mentioned and then induce the medical man to add a descriptive note as to how this state of things had arrived it might be of very great value, but he did not think they would succeed in the matter. If they asked for such information some medical men would probably give them a great deal too much and it might become a nuisance. When a medical man had been in attendance the registrar asked for a certificate from him, and did not register a death if he could avoid it until he received it. That arrangement was carried out under the sanction of the law officers of the crown, but he had grave doubts himself as to whether it was legal. He doubted whether there was anything to empower a registrar to refuse to register a death if a properly qualified informer came forward without a medical certificate. He considered it necessary to get the advice of the law officers. They said that he had this power, but should exercise it with very great discretion. In the case of an inquest they had simply the coroner's certificate. He did not regard as satisfactory the relations between registration and burial. Before the passing of the Public Health Act of 1878 there were no relations whatever between the burial and the registration authorities. The burials took place simply in accordance with the regulations of the cemeteries. There was no check. At the instance of the medical profession an amendment was introduced providing that the clerk or secretary or registrar of every burial board having charge of a burial ground should make a return of the names, addresses, dates of death, and causes of death, so far as ascertained by him, of the persons whose bodies had been interred in the burial ground to the registrar of the district in which the persons had resided. The amendment further provided that the clerk, secretary, or registrar should be paid by the sanitary authority such sum as the Local Government Board might direct, not being more than threepence for each entry. That was introduced in order to secure something like the identification that took place in England. There was a section in the Registration Act of 1880 which said that the return would be deemed to have been made if this clause of the Public Health Act was complied with. Prior to this enactment the returns for the City of Dublin were far from satisfactory. There were 9 per cent. more burials than there were deaths registered. The discrepancy had now disappeared. It was true that, in spite of the improved state of the law, cases did escape registration. They had a return of all burials that occurred under the Public Health Act, whether the deaths had been registered or not. There were, of course, certain cemeteries which did not come properly under the Public Health Act. Witness then cited two cases in Dublin where there had been burial, but where the authorities could not trace the body or get information for the purposes of registration. In each case the burial order was taken out by the parents and the coffin was carried away from the undertaker by the purchaser. He did not think that the question of insurance entered into either case, because there was no certificate, and without that there could be no payment of money. The suggestion had been thrown out that it might be the means of making away with stolen goods, but the coffins were not exhumed. Hitherto the number of uncertified deaths had not been taken out, but he had given instructions to have this done in compiling the statistics for last year. He could give the cases in which the cause of death was unspecified or ill-defined. The percentage was 6·7. Referring to the statistics for Dublin he found that the relative number of uncertified deaths decreased in each successive age period up to and including that of twenty, and after forty it increased as the age advanced. In the year 1890 the percentage of uncertified deaths was 11, in the following year 10·3 and in 1892 it was 9·7. The statistics further showed that of 615 deaths of children under one month no fewer than 258, or 50·1 per cent., were uncertified. To put the matter shortly, he found a considerable percentage of uncertified deaths amongst very young people and very old. The latter might be accounted for by the fact that very old people were often without medical attendance. There was, however, something wrong in the case of young people. His opinion was, although many in Dublin did not agree with him, that child life insurance had a good deal to do with the high rate of mortality amongst children. There were various ways of surmounting the difficulty caused by the absence of a death certificate in the case of an uncertified death. People who had seen the dead body would be able to convince some of the insurance companies that the child had died and thus the certificate would not be required. Some arrangement, too, might be made by which the people got something out of the insurance companies. Certainly the passing of the Friendly Societies Act, requiring the production of death certificates before money was paid, had not been without effect. As to the remedy, he thought the present law was sound enough; what was required was more stringent application of it. Returning to the general question, witness expressed his approval of the French system of verifying deaths and inquiring into their cause. At present there was, he said, no means whatever of identifying the body as that of the person named in the certificate. He might mention a case that occurred in a slum in Dublin a good many years ago. A child was insured in a burial society, and a child in an adjoining tenement was not insured. The child that was not insured died, and was put into the house where the insured child lived. The agent of the burial society came, he saw the body, and he paid the money. Then the people had a "spree" with the money. In Ireland the introduction of the French system would be comparatively easy by means of the dispensary officers. These gentlemen might not like the work; at any rate, there they were, ready to hand. Identification could very easily be carried out, because the dispensary officer in Ireland held all the medical appointments in his district, and he had a large amount of information before him. In cases of doubt it would of course be his duty to fall back upon the coroner.

By Sir Thomas Lea: The evils he complained of were not confined to Dublin; they existed in country districts quite as much as in the towns.

By Dr. Cameron: He came across cases where one medical man had been in attendance for some time and another had been called in shortly before the death. The second man had apparently been called in for insurance purposes. It was he who certified the death. He did not find any special carelessness in filling up certificates in public institutions, although a workhouse occurred to him where they were not only

careless but obstructive. For insurance purposes the registrar gave a copy of the entry in the register. It was not absolutely necessary that there should be a medical certificate. His department knew nothing about stillbirths, which were neither entered as births nor deaths. The stillborn child to be interred in a cemetery must be accompanied by a certificate to the effect that it was stillborn. It was true that the certificate might be given by a midwife and even by the mother. The person who made a false declaration with regard to this matter would be liable to a penalty of £10. There was no machinery by which he or she could be found out except the ordinary police machinery.

By Mr. Brookfield: He would not say that through child insurance a large number of children were murdered; they were allowed to die. In his opinion all infant insurance should be prohibited.

Dr. ALFRED GEORGE BATEMAN, one of the honorary secretaries of the Medical Defence Union, examined by the Chairman, said that in his opinion the present system of death certification was about as bad as it possibly could be. In the first place, it should be made more difficult to obtain a book of death certificate forms than to obtain a cheque-book from a bank. At present anybody sending in the name of a medical man, whether the latter were living or dead, could get a book of forms. These certificates fell into the hands of unqualified persons who used them for fraudulent purposes. In a great many cases they were accepted by the registrars. In many cases the names of medical men, qualified and registered, had been used by unqualified men on death certificates without their knowledge or consent. There was no safeguard against such a thing. What he suggested was that when a registered and qualified man required a book of forms for the first time he should be required to fill up an application form signed by himself in his usual signature in the presence of the registrar, and should present proofs of qualification and registration and identity. He was alive to the fact that this duty of death certification was performed gratuitously by medical men. He did not think that medical men generally objected to it; a few of them might. Each book should contain an application form after the manner of a cheque-book, and this should be signed by the applicant with his usual signature and qualifications. In the case of death or retirement the unused forms should be returned. All these suggestions were made with a view to prevent the improper use of medical certificates. He thought the stringent regulations he had sketched were warranted by the facts of the case. Another suggestion he wished to put before the Committee was that every superintendent and subregistrar should be provided with a copy of the Medical Register and that the General Medical Council should be called upon to make a quarterly issue of changes. It would be a great facility if the Medical Register could be made up in divisions of districts or counties; but a medical man might live in one district and certify a death which occurred in another. A man living in London might certify a death in Newcastle. At present the registrar must report to the coroner within twenty-four hours. He thought that, say, forty-eight hours should be allowed him to test the legality of the medical certificate. Where there was no medical certificate, of course he was of opinion that the coroner should be called in at once. In order to obtain greater accuracy in the system of death certification prosecutions for the issue of false certificates should be instituted more frequently. He would give the district registrar power to prosecute and to call in legal aid. As to the form of the certificate, he would suggest that the word "alive" should be inserted after the words, "I last saw her or him." He knew a case where a man insisted that a visit paid after the death of the patient was an attendance.

Sir Henry Roscoe: Is such a thing common?

Dr. Bateman: It is very rare.

Sir Henry Roscoe: Is it so rare that it is not worth while altering the certificate?

Dr. Bateman: We only see cases that come into court. It would be impossible to pass an opinion about that. In further examination by the chairman, Dr. Bateman said that, in his opinion, the medical man should see the body in every case; and he would require evidence that he had seen the patient when alive and after death. As to the issue of false certificates he would suggest that the assistant who uttered them should be prosecuted in the same way as the principal, and that the prosecution should be by indictment rather than by summons.

The Committee then adjourned.

The Committee met again on Tuesday, 25th inst., Sir WALTER FOSTER in the chair.

SIR HENRY THOMPSON, President of the Cremation Society, examined by the chairman, said he had had many years' experience as a consultant surgeon, and from time to time it had been his duty to certify deaths. The present form of the certificate had brought about many unfortunate results. There was a notable example he might quote—the well-known case of Matilda Clover—a case which offered several important lessons. After narrating the circumstances of the case, witness expressed the opinion that the symptoms shown immediately before death would at once have been recognised by a medical man as those of strychnine poisoning. But the medical man in the case had not seen those symptoms. He had seen the woman several times suffering from the effects of alcohol, and the certificate he gave did not in any way indicate the presence of poison. One lesson here was that no person ought to give a certificate who had not seen the patient during the illness immediately preceding death. It was absolutely essential to see the last attack if he were to judge at all as to the real cause of death. He did not think it was an unwise precaution in the present form of certificate to ask for information as to the first cause or foundation and as to the last, or approximately the last, attack. It was of course quite possible that the last attack might be of such short duration that the medical man could not arrive in time to see the patient alive. In such a case, if the medical man acted in accordance with the present instructions on the certificate form, he would not certify. Anybody might be poisoned during an attack, say, of typhoid fever. He mentioned typhoid fever because it was common, and its very commonness was a reason why it should be closely watched by a qualified medical man. His contention really came to this, that in no case ought the existence of a previous illness to justify a medical man giving a certificate unless he was acquainted with the actual details of the last symptoms. In the certificate there ought to be some means of verifying not only the fact of death, but the identity of the body. The body must be ascertained beyond doubt by the person certifying to be that of the person alleged to be deceased in the certificate. As a rule, he should say medical men do not see the body after death. In every case the cause of death should be ascertained so far as that was possible. He considered the cause of death to be quite as important as the fact of death, having regard to the prevention of crime and fraud and the preparation of valuable vital statistics. His experience in connexion with the Cremation Society led him to the conclusion that changes were necessary in the present method of certification. There was no doubt that since cremation had become a mode of disposing of the dead it was essential to do everything in the shape of investigation while the body was above ground. But whether the body was to be disposed of by burial or cremation it was almost equally necessary that the investigation necessary to ascertain the cause of death should take place as soon as possible, and certainly whilst the body was above ground. Burial did not destroy evidence of poison or neglect so quickly as cremation, but it was merely a question of time. In the case of cremation there were always two certificates by medical men. At Woking 393 bodies had been cremated, and in regard to each of these he had carefully inquired into the certificates. He dealt with the medical men with perfect confidence, and if there was the slightest doubt or suspicion he insisted upon a post-mortem examination. If there was any objection to such an examination he advised burial. If desirable small portions of the liver, the kidney and the stomach were retained. These parts were taken in the presence of a witness, and were placed in a jar and sealed. In only four or five cases out of the 393 had the parts been retained. If such precautions were made universal it would be a very good thing. After explaining in detail the French system of death certification, witness strongly recommended it for use in this country. He could not take the view that its cost was prohibitive. Everything depended on the importance they attached to the subject. For himself he could not conceive that society had a more important duty than that of being perfectly satisfied that no death, or as few deaths as possible, should take place from foul play. Society had done much to promote education, which in certain circles became a dangerous weapon. No doubt since the improvement of education there had been a considerable diminution of crime, but at the same time education had opened the door to secret crime. He was speaking of crime that was not detected, but which was known to exist. The methods of detecting crime must therefore be made more precise.

By Sir Stafford Northcote: His contention was that no certificate should be given until a medical man had seen the body.

By Dr. Cameron: In connexion with cremation, they at one time found considerable ambiguity as to the state of the law with regard to the disposal of the dead. The crematorium was, in fact, built five or six years before it could be used. Before building it they had very good advice, as they thought, that there was nothing illegal about cremation, but for some time the Government would not allow them to start cremating. It was mutually agreed, after a consultation with the department, to allow the matter to lie in abeyance for a time. Then came the important decision of Mr. Justice Stephen, which set all doubt at rest. Immediately after this decision they commenced receiving bodies and had not since been subjected to any interference by the Government. Public attention having been called to the subject so very much within the last few years, this was an opportune moment for seeking the introduction into the law of further precautions in connexion with the disposal of the dead. He would suggest that no body ought to be buried, burned or otherwise disposed of without a medical certificate of death signed by a qualified medical man, and that a qualified medical man should be appointed as official certifier in every parish or district. If the circumstances obviously demanded a coroner's inquest the case should be referred to the coroner at once. Another suggestion he had to put forward was that no person should be permitted to construct or use a crematorium without a licence from the Home Secretary. He further suggested a system of Government inspection and a provision to the effect that the burning of the human body otherwise than in officially recognised crematoriums was illegal and punishable. With proper precautions he saw no reason why cremation should not be as safe as burial. It was argued that in the case of burial exhumation was always possible. He had collected some information on this point. On his suggestion Dr. Danford Thomas organised a systematic inquiry designed to obtain the results of exhumation for the last twenty years or more. There were 334 coroners in England and Wales, and of these 317, embracing all the important districts, replied to the series of questions addressed to them. Sixty-two coroners had been directed to proceed with exhumations, and the total number of exhumations had been 102, making the mean number throughout the year about five. Manifestly the time to discover signs of violence and foul play was when the body was above ground. Amongst the 102 cases where there had been exhumation there were only thirteen where foul play was discovered. He would like to see the medical expert to whom he had referred associated in some way with the medical officer of health for the district and with the coroner. It would be the duty of this official to make inquiry where there had not been the requisite attendance by a qualified medical practitioner. In the great majority of cases he would experience no difficulty in arriving at the cause of death, and by having such an official many of the inquests now held would be rendered unnecessary. In his opinion medical men should be paid a small fee for every death certificate issued by them. If the certificate was worth having it was worth paying for, and there should be no grudging about the matter.

Dr. Farquharson: The only difficulty about cremation is this—suppose, after a body has been buried, circumstances arise which excite suspicion, circumstances which did not arise at an earlier stage. Of course now when you exhume the body you can get an investigation into the cause of death, or you can do more—you can allay suspicion that may have rested upon an innocent person.

Sir Henry Thompson: Of course that would be a difficulty in cremation, but with cremation precautions would be taken which were never taken before, and, inasmuch as the disposal of the body is so efficiently done in cremation, I think the advantages must outweigh any disadvantages.

After some further questions had been answered by Sir Henry Thompson the Committee adjourned.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ABERNETHY, JAS., M.B., Ch.B. Melb., has been appointed Public Vaccinator for Millicent, South Australia.

ARMSTRONG, GEORGE, M.B, Ch.B. Melb., has been appointed Medical Superintendent of the Sydney Hospital, New South Wales.

BARNETT, H. C., L.R.C.P., L.M. Edin., M.R.C.S., has been appointed Superintending Medical Officer at "The Knowle" Lunatic Asylum, Western Australia.

BELL, THOS., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Uppingham Sanitary District and the Workhouse of the Uppingham Union.

CAMPBELL, PETER, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Usk Sanitary District of the Pontypool Union, vice Shepherd.

CORRY, WILLIAM, M.D., Ch.M. Irel., D.P.H. Camb., has been appointed Public Vaccinator for Kingston, Victoria, South Australia, vice Allen.

CROFT, EDWARD OCTAVIUS, M.R.C.S., L.R.C.P., has been appointed Honorary Demonstrator in Midwifery to the Medical Department of the Yorkshire College, Leeds.

CURTIS, MONTAGUE W. W., M.R.C.S., L.R.C.P. Lond., has been appointed Resident Medical Officer to the Pontefract General Dispensary and Accident Ward.

DICK, ROBT., M.B. Sydney, has been appointed Demonstrator of Anatomy at the Sydney University, New South Wales.

DONALD, J., M.R.C.S., has been appointed Medical Officer for the Kingston Workhouse.

ELLIS, SIDNEY, M.R.C.S., L.S.A., has been appointed Medical Officer for the Third and Sixth Districts, and Public Vaccinator for the Third and Fifth Districts, Alderbury Union, vice Gordon, deceased.

HARE, F. J., B.Sc., M.B., C.M. Edin., has been appointed Assistant House Surgeon to the Liverpool Northern Hospital.

JOHANSEN, J. P. E., M.D., Ch.D. Berlin, has been appointed an additional Public Vaccinator for the District of Nelson, New Zealand.

JONES, G. F., M.R.C.S., has been appointed Medical Officer of Health for the Southend Urban Sanitary District of the Rochford Union, vice Philips, resigned.

JOYCE, A. F., M.B., Ch.B. Melb., has been appointed Officer of Health for Moorabbin Shire, N. R., Victoria, South Australia.

LITTLE, HENRY S., B.A. Lond., M.R.C.S., L.S.A., has been appointed Medical Officer to the Reading Dispensary.

LOWE, C. E. M., M.B. Vict., has been appointed Junior House Surgeon to the Wigan Infirmary, vice Dr. Munro, promoted.

MCARTHUR, D. R., M.D., C.M. Edin., has been appointed Medical Officer and Public Vaccinator by the Luton Board of Guardians.

MILNE, JAS., M.B., Ch.M. Edin., has been appointed Medical Officer to the Hospital at Boulia, Queensland.

MOONEY, HERBERT C., L.R.C.P., L.M., L.R.C.S. Irel., has been appointed Resident Medical Officer to the National Eye and Ear Infirmary, Dublin, vice Mills, resigned.

MUIR, J. M. M., M.B., Ch.M. Glasg., has been appointed Health Officer for the Newham Shire, Victoria, South Australia.

MUNRO, J. D., M.B., C.M. Edin., has been appointed Senior House Surgeon to the Wigan Infirmary, vice Carter, resigned.

MURDOCH, MARY C., L.R.C.P., L.R.C.S. Edin., L.F.P. & S. Glasg., has been appointed House Surgeon to the Victoria Hospital for Children, Hull.

OLDMEADOW, L. J. H., M.B., C.M. Edin., has been appointed House Physician to the Liverpool Northern Hospital.

PETTIT, W. B., L.R.C.P. Lond., M.R.C.S., has been appointed House Surgeon to the Worcester Infirmary.

ROBINSON, W. C., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer to the Cobar Hospital, New South Wales.

SCOVER, FRANK, M.R.C.S., L.R.C.P. Lond., has been appointed Junior House Surgeon to the Glamorganshire and Monmouthshire Infirmary, Cardiff.

STEVENS, W. M., M.D. Lond., M.R.C.S., L.R.C.P., has been appointed Medical Tutor at the Medical School, Bristol.

STEVENSON, JAS. R., M.B., Ch.M. Edin., has been appointed Health Officer for Petersburg, South Australia.

WADE, M. A., L.R.C.P., L.M., L.R.C.S. Irel., has been appointed Medical Officer to the Collingwood Dock Bridewell, Liverpool.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BRISTOL GENERAL HOSPITAL.—House Surgeon, for three years. Salary £120 per annum, with board, residence &c. in the house.

CITY OF SHEFFIELD.—Assistant Resident Medical Officer for the City Hospital for Infectious Diseases. Salary £120 per annum, with board, lodging and attendance. Apply to the Town Clerk, Town Clerk's Office, Sheffield.

ECCLES AND PATRICROFT HOSPITAL.—House Surgeon. Salary £60, with board and lodging. Apply to H. J. Reiss, Esq., 11, Quay-street, Manchester.

GREENWICH UNION INFIRMARY.—Second Assistant Medical Officer (unmarried). Salary £80 per annum, with board, lodging, washing and attendance in the Infirmary. Apply to the Clerk to the Guardians, Union Offices, Greenwich.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, W.C.—House Physician, for six months. Salary £20, with board and residence in the hospital.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, W.C.—Medical Registrar and Pathologist, for one year. Honorarium of 50 guineas at the end of that term.

LONDON HOSPITAL, Whitechapel-road, E.—Medical Registrarship. Salary £100 per annum.

NATIONAL DENTAL HOSPITAL, Great Portland-street, W.—Assistant Dental Surgeon.

NATIONAL DENTAL HOSPITAL, Great Portland-street, W.—Anæsthetist.

ROYAL BERKS HOSPITAL, Reading.—House Surgeon. Salary £80 per annum, with board and lodging.

ROYAL HOSPITAL FOR CHILDREN AND WOMEN, Waterloo-bridge-road, S.E.—Anæsthetist and Registrar. Honorarium 20 guineas per annum.

ST. BARTHOLOMEW'S HOSPITAL, London.—Assistant Physician.

WEST DERBY UNION.—Resident Assistant Medical Officer, at the Mill-road Infirmary. Salary £100 per annum, with rations.

Births, Marriages and Deaths.

BIRTHS.

FITZ-GERALD.—On April 26th, at 82, Sandgate-road, Folkestone, the wife of Edward Desmond Fitz-Gerald, M.R.C.S., L.R.C.P., of a son.

HINGSTON.—On April 23rd, at Liskeard, Cornwall, the wife of Richard Hingston, L.R.C.P. Lond., M.R.C.S.E., L.S.A., of a daughter.

JOHNSTONE.—On April 18th, at The Hermitage, Melrose, N.B., the wife of J. Carlyle Johnstone, M.D., of a son.

PIETERSEN.—On April 21st, at Ashwood House, Kingswinford, near Dudley, the wife of J. F. G. Pietersen, L.R.C.P., M.R.C.S., of a daughter.

SNELL.—On April 20th, at Lynwood, Broomhall-park, Sheffield, the wife of Simeon Snell, F.R.C.S. Ed., of a daughter.

MARRIAGES.

EDRIDGE-GREEN—HICKS.—On the 26th inst., at St. Mary's, Hendon, by the Rev. Chancellor Richardson, M.A., Rector of Corwen (uncle of the bride), assisted by the Rev. and Hon. Leonard Tyrwhitt, M.A., Senior Curate of Hendon, Frederic William Edridge-Green, M.D., F.R.C.S., of 6, Ravensfield-villas, Hendon, second son of T. Allen Green, Esq., of Waverley House, Hendon, to Minnie Jane, second daughter of Henry Hicks, M.D., F.R.S., of Hendon-grove, Hendon.

MARTIN—PATTEN.—On the 26th inst., at St. Saviour's, Paddington, by the Rev. Marshall Tweddell, M.A., Vicar, assisted by the Rev. Elford C. Lethbridge, M.A., Incumbent of St. Paul's, Mill Hill, and the Rev. G. H. Pownall Glossop, M.A., Curate of the Cathedral, St. Alban's, Henry Joseph Walklate Martin, M.R.C.S., L.S.A., of West-grove, Mill Hill, to Alfreda Louisa Mary, younger daughter of Robert John Patten, of 8, Randolph-crescent, Maida-hill.

MITCHELL—RAMSAY.—On the 27th inst., at St. George's, Hanover-square, by the Rev. Edward Louis Churchill, Clapton, M.A., Vicar of St. Michael's, Wandsworth Common, assisted by the Rev. Edward Travers Clark, M.A., of Chirlet, Canterbury, Robert Nathaniel Mitchell, M.D., of 27, Fitzjohn's-avenue, N.W., to Clara Margaret, widow of the late Richard Harris Ramsay of London, Calcutta and Bangkok. No cards.

MURRAY—STURTON.—On the 19th inst., at St. Mary Magdalene, Fleet, Lincolnshire, William Alfred Murray, M.B., of Cambridge-terrace, Southend, to Edith Mary, eldest daughter of the Rev. Jacob Sturton, Rector of Woodborough, Wilts.

RUTTER—GÜNTHER.—On April 19th, at St. Mark's Church, Glodwick, Oldham, George Herbert Rutter, M.B., C.M., of Colwyn Bay, to Annie Louise Auguste, elder daughter of William Günther, Lyndhurst, Queen's-road, Oldham.

SIMS—TUCK.—On the 19th inst., at Christ Church, Barnet, by Rev. W. Bonsey, Vicar of Northaw, Herts, assisted by the Rev. H. Joy Browne, M.A., Vicar, George Samuel Sims, L.R.C.P., M.R.C.S. &c., of "The Hollies," Derby, to Caroline Margaret Tuck of Marriott-road, Barnet.

TAYLOR—CRESSER.—On the 19th inst., at Stretford Parish Church, by the Rev. David Ellison, Rector of All Saints', Manchester, assisted by the Rev. Dudley Hart M.A., Rector, Mowbray Taylor, M.B., C.M. Edin., of Dartford, Kent, second son of the late Michael W. Taylor, M.D., F.S.A., of Penrith and London, to Gertrude H., eldest daughter of Walter W. Cresser of Stretford, Manchester.

DEATHS.

ALLINSON.—On April 23th at The Maples, Croydon-road, Anerley, John Allinson, M.R.C.S., late of Walthamstow, Essex, aged 62.

DYSON.—On April 18th, at Normanton, Queensland, Thomas Sheppard Dyson, M.R.C.S., aged 42.

MACKENZIE.—On April 19th, at Upperton-gardens, Eastbourne, Malcolm Monro Mackenzie, Brigade-Surgeon, Bombay Army, retired, aged 65.

MCLEAN.—On Friday, 21st April, at her home in Stickney, Lincolnshire, of pneumonia, Minnie, beloved wife of William W. L. McLean, M.R.C.S., L.R.C.P. Lond., L.S.A., and youngest daughter of John and Martha Lawson, Italian Villa, Hurlingham-lane, Fulham, S.W., aged 26 years.

MUSGRAVE.—On April 19th, at Belfast, Samuel Musgrave, F.R.C.S., L.R.C.P. Edin.

SPENCER.—On the 22nd inst., at Sandford Lodge, Southbourne-on-Sea, Hants, Robert Spencer, L.R.C.P., M.R.C.S., late Medical Superintendent, Chartham Asylum, Canterbury, Kent, aged 59.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, April 27th, 1893.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Apr. 21	30·14	N.E.	59	53	115	73	51	..	Hazy
,, 22	30·15	S.E.	57	52	111	68	50	..	Bright
,, 23	30·10	E.	61	54	106	75	48	..	Hazy
,, 24	30·09	E.	58	51	109	73	50	..	Hazy
,, 25	30·03	S.E.	57	50	116	76	50	..	Bright
,, 26	30·03	S.E.	56	48	112	72	47	..	Bright
,, 27	30·00	E.	48	46	101	57	45	..	Overcast

Medical Diary for the ensuing Week.

Monday, May 1.

KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.; Fridays and Saturdays, at the same hour.

ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1.30 P.M.; and on Tuesday, Wednesday, Friday, and Saturday at the same hour.

ST. MARK'S HOSPITAL.—Operations, 2 P.M.; Tuesday, 2.30 P.M.

ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 2.30 P.M.; Friday, 2 P.M.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, daily at 10 A.M.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1.30 P.M.; and each day at the same hour.

CHELSEA HOSPITAL FOR WOMEN.—Operations, 2 P.M.; Thursday, 2 P.M.

HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M.; and on Thursday at the same hour.

METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.

ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.

CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and each day in the week at the same hour.

UNIVERSITY COLLEGE HOSPITAL. Ear and Throat Department, 9 A.M.; Thursday, 9 A.M. Eye Department, 2 P.M.

LONDON POST-GRADUATE COURSE.—Royal London Ophthalmic Hospital: 1 P.M., Mr. R. M. Gunn: External Examination of the Eye.—101, Gt. Russell-street: 8 P.M., Dr. Galloway: Malignant Tumours.—Parkes Museum (Margaret-st., W.): 3.30 P.M., Dr. Parkes: Water Supply.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (40, Leicester-sq., W.C.).—8 P.M. Mr. W. R. Ackland will open a Discussion on the Treatment of Antral Disease. Casual communications by Messrs. J. H. Mummery, David Hepburn, F. J. Bennett and J. H. M'Call.

MEDICAL SOCIETY OF LONDON.—Annual Conversazione. Oration at 8.30 P.M. by Prof. W. Mitchell Banks on "Physic and Letters."

Tuesday, May 2.

GUY'S HOSPITAL.—Operations, 1.30 P.M., and on Friday at the same hour. Ophthalmic Operations on Monday at 1.30 and Thursday at 2 P.M.

CANCER HOSPITAL, BROMPTON.—Operations, 2 P.M.; Saturday, 2 P.M.

WESTMINSTER HOSPITAL.—Operations, 2 P.M.

WEST LONDON HOSPITAL.—Operations, 2.30 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Skin Department, 1.45; Saturday, 9.15.

ST. MARY'S HOSPITAL.—Operations, 1.30 P.M. Consultations, Monday, 2.30 P.M. Skin Department, Monday and Thursday, 9.30 A.M. Throat Department, Tuesdays and Fridays, 1.30 P.M. Electro-therapeutics, same day, 2 P.M.

LONDON POST-GRADUATE COURSE.—Hospital for Skin Diseases, Blackfriars: 4 P.M., Mr. Jonathan Hutchinson: Syphilitic Lupus.—Bethlem Hospital: 2 P.M., Dr. Percy Smith: Hysterical Mania; Acute Delusional Mania.—101, Gt. Russell-st.: 8 P.M., Dr. Herman: Painful Micturition.

PATHOLOGICAL SOCIETY OF LONDON.—Mr. Chas. A. Morton: (1) Case of Tuberculosis of Fallopian Tubes, Uterus and Vagina in a Child; (2) Lymphatic Nævus of Tongue.—Mr. J. Warrington Haward: Specimens illustrating the Anatomy of Hammer Toes.—Mr. A. H. Tubby: Specimens illustrating the Processes of Regeneration of Fibrous Tissue in Tendon.—Dr. W. Hale White: Growth of Mediastinum opening into both Œsophagus and Aorta.—Mr. J. Jackson Clarke: Psorospermial Growth from a Cat's Lip.—Dr. J. E. Squire: Case of Endocarditis and Pulmonary Tuberculosis. Card Specimens by Dr. J. S. Sharkey, Mr. S. G. Shattock, Mr. E. C. Stabb, Mr. C. A. Morton and Mr. C. F. Beadles.

Wednesday, May 3.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.

MIDDLESEX HOSPITAL.—Operations, 1.30 P.M.; Saturdays, 2 P.M. Obstetrical Operations, Thursdays, 2 P.M.

CHARING-CROSS HOSPITAL.—Operations, 3 P.M., and on Thursday and Friday at the same hour.

ST. THOMAS'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour.

LONDON HOSPITAL.—Operations, 2 P.M.; Thursday and Saturday, same hour.

ST. PETER'S HOSPITAL, COVENT-GARDEN.—Operations, 2 P.M.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2.30 P.M.

GREAT NORTHERN CENTRAL HOSPITAL.—Operations, 2 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 1.30 P.M. Dental Department, 9.30 A.M. Eye Department, 2 P.M.

ROYAL FREE HOSPITAL.—Operations, 2 P.M., and on Saturday.

CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—Operations, 9.30 A.M. Surgical Visits on Wednesday and Saturday at 9.15 A.M.

LONDON POST-GRADUATE COURSE.—Hospital for Consumption, Brompton: 4 P.M., Dr. C. Theodore Williams: Varieties of Pleurisy.—Royal London Ophthalmic Hospital: 8 P.M., Mr. A. Q. Silcock: Choroidal Disease, with Illustrative Cases.

OBSTETRICAL SOCIETY OF LONDON.—8 P.M. Specimens will be shown. Dr. Giles: On the Lochia.—Dr. R. Lawford Knaggs: An unusual case of Hæmatosalpinx.

Thursday, May 4.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. Surgical Consultations, Wednesday, 1.30 P.M. Ophthalmic Operations, Friday, 1.30 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M. Ear and Throat Department, 9 A.M. Eye Department, 2 P.M.

LONDON POST-GRADUATE COURSE.—Hospital for Sick Children, Great Ormond-st.: 4 P.M., Dr. Sturges: Pneumonia in Children.—National Hospital for the Paralysed and Epileptic: 2 P.M., Dr. Charlton Bastian: Aphasia and Amnesia.—London Throat Hospital (Gt. Portland-st.): 8 P.M., Mr. W. R. H. Stewart: Examination of the Ear.—Central London Sick Asylum: 5.30 P.M., Mr. John Hopkins: Clinical Lecture.

HARVEIAN SOCIETY.—8.30 P.M. Dr. Charles Gross: Some Obscure Head Injuries.—Mr. Silcock: Radical Cure of Hernia.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.—8.30 P.M. Patients and Card Specimens at 8 P.M. Mr. S. Johnson Taylor: Intraocular Growth of Unusual Nature.—Messrs. Hartridge and Griffith: Microscopical Sections of a case of Leucocythæmic Retinitis.—Dr. A. Bronner: A peculiar case of Membranous Conjunctivitis.—Dr. Geo. A. Berry: On the Relation between Visual Acuity and Visual Efficiency.—Mr. Simeon Snell: (1) Two cases of Blindness following Erysipelas; (2) Case of Nævus of the Plica Semilunaris and two others of the Conjunctiva; (3) Retention of Normal Vision after the Passage of a Leaden Pellet through the Eyeball.—Mr. P. H. Mules: (1) Two examples of Complete Separation of the Choroid; (2) An unusual case of Pyramidal Cataract.—Mr. Rockliffe: Notes on a case of Tumour of the Optic Nerve.—Dr. Scougal: Double Optic Atrophy following Erysipelas of one side of the Face.

Friday, May 5.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Eye Department, 2 P.M.

LONDON POST-GRADUATE COURSE.—Hospital for Consumption, Brompton: 4 P.M., Dr. C. Theodore Williams: Varieties of Pleurisy.—Bacteriological Laboratory, King's College: 11 A.M. to 1 P.M., Prof. Crookshank: The Microscope (Types of Bacteria).

WEST KENT MEDICO-CHIRURGICAL SOCIETY (Miller Hospital, Greenwich). Mr. C. B. Lockwood: Laparotomy in cases of Intussusception.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY (West London Hospital).—8.30 P.M. Dr. S. Bontor: A case of Primary Tubercular Cystitis in a Child (with Specimen).—Dr. J. B. Ball: On cases of Purulent Nasal Discharge in Children.—Dr. Wm. Travers: Notes on a case of Albuminuria in Pregnancy.

Saturday, May 6.

UNIVERSITY COLLEGE HOSPITAL.—Operations. 2 P.M.; and Skin Department, 9.15 A.M.

LONDON POST-GRADUATE COURSE.—Bethlem Hospital: 11 A.M., Dr. H. Corner: Acute Mania.

Notes, Short Comments & Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Publisher."*

We cannot undertake to return MSS. not used.

"MEDICAL OFFICERS OF HEALTH AS DIAGNOSTICIANS."

To the Editors of THE LANCET.

SIRS,—Having observed in THE LANCET of April 15th a case of interference by the medical officer of health with the practitioner's diagnosis I may relate two cases that occurred in my own practice. The one was a case of typhoid fever in an adult, where the medical officer called the next day and stated to the patient that it was a case of phthisis, that she was in the last stage of the disease and that she might die at any time, but could not last over a few days; however, the patient began to mend at the usual time, made a good recovery, and is alive to this day, for anything I have heard to the contrary. But all the brothers and sisters were struck down with the disease, as well as a considerable number of others in the locality. I may say that the officer acknowledged his mistake after the patient was going about again.

I am, Sirs, yours faithfully,

April 18th, 1893. A GENERAL PRACTITIONER.

Mr. B. Duke.—The lady in question has no medical status, as our correspondent observes. This probably accounts for her glibly lecturing on so grave a subject. "Fools rush in" &c. We think the best way to treat such popular lectures is to leave them severely alone.

A BULLET WOUND IN THE EAR.

Mr. A. W. Hunton, M.R.C.S., L.R.C.P. Lond., forwards us an interesting account of a case in which, by the thoughtless use of a revolver, a bullet was lodged in the left ear of a boy by a playfellow in 1874. Medical assistance being summoned, the sufferer was found in an unconscious state and bleeding from the left aural orifice, from which brain matter and pieces of bone were exuding. Attempts were made to find the bullet, but without success. The patient remained unconscious for many days, with slight intermissions. There was marked facial paralysis, together with loss of power in the arm and leg on the affected side. Subsequently further ineffectual attempts were made to discover the bullet, the boy being under the influence of chloroform. He gradually recovered, but the facial paralysis and the weakness in the left limbs persisted. He was totally deaf in the left ear, from which also there was a constant dark-coloured and offensive discharge. His mind was not affected, but he suffered from intense headache and severe facial neuralgia. In October, 1892—that is, eighteen years after the accident—the patient consulted Mr. Hunton, who found the external appearance of the ear normal, but the lower part of the external auditory meatus was closed except for a small aperture through which a thick foul-smelling discharge was exuding. Probing with a porcelain probe resulted in the discovery of the presence of lead, which was removed from a considerable depth and was much corroded. The wound healed, the feeling of irritation passed away and the patient made a complete recovery. The writer propounds three queries in connexion with this case: (1) Was the piece of lead removed the whole of the bullet lodged in the ear, or only the portion which had become detached, and if so what had become of the remainder? (2) Where was the bullet when it was searched for immediately after the accident, and how did it make its way to where it was found? (3) The fact of brain matter exuding from the wound and the rotatory movement of the patient directly after the accident appear to indicate either that the bullet penetrated the brain or that the brain was injured by a portion of bone being driven into it, or else that the semicircular canals had been injured. (4) The fact of the paresis of the arm and leg being on the same side as the injury would point to some lesion of the brain on the other side or to some pressure on the cord after the decussation of the fibres.

THE LICENTIATE APOTHECARY.

To the Editors of THE LANCET.

SIRS,—The "poor L.S.A." who reads your journal must often be pained, though he may have cause to be surprised, at the attacks made on the status of the holders of this qualification by critics who, like Byron's, "themselves are sore." It is contended that the use of the prefix "Dr." or even "Surgeon" by a licentiate apothecary is an outrage and illegal. It is no greater outrage in the case of a person so licensed to use the prefix "Dr." than it is in the case of licentiates of colleges of physicians or surgeons; and it is known that this is common and done throughout the country, even by men with only one qualification. If custom is to be pleaded in one case, even that of M.B.'s, it must be pleaded in all. Custom, it has been said, is stronger than law, and certainly the march of events points that way in the matter of titles .... How many other things are illegal that custom has, so to speak, legalised? .... Is it not a fact that the Apothecaries' Hall of Ireland, when they had the power to grant a registrable diploma, exacted as complete a curriculum of study as other more pretentious licensing bodies? .... The law has just decided that the word "physic" embraces surgery, as the examinations always have done. The L.S.A. (London) under the old regulations has not, perhaps, the same surgical claim; but at all events the custom of the country can be quoted in his favour, for go where you will in the rural districts the L.S.A. only is spoken of and described as the local doctor or surgeon. Many of them hold Poor-law appointments and are even factory surgeons, elected as such by the Government. Here is a clear conferring of the title "Surgeon" by the law of the land, and yet the L.S.A. is said to be acting "illegally" if he uses the title.

I am, Sirs, yours truly,

April, 1893. LICENTIATE APOTHECARY.

*** We have omitted certain passages in the above letter, partly from want of space, but partly also on account of its illegibility.—ED. L.

CLAIM FOR A MIDWIFERY FEE WHERE NO MIDWIFERY IS REQUIRED.

Perplexed.—Our correspondent's method of securing his fee is unusual, to say the least. It has, we think, been held that a medical man retained for a confinement is entitled to the fee, even if he be not sent for; and there is reason in this, as he may have hindered himself in other directions in order to be able to keep this engagement. Possibly in this case such a plea might hold in law; but we should not, under the circumstances, advise our correspondent to press the claim. A mistake in diagnosis happens occasionally to medical men themselves. It should not be severely judged in a patient who erroneously fancies herself pregnant. Our correspondent should make a reasonable charge for his visit and advice.

"THE FRIENDLY SOCIETIES AND THE MEDICAL AID QUESTION."

Mr. Clement H. Sers favours us with another communication anent the above-named subject, and is good enough to express his approval of our remarks on the deliverance of Dr. Hutton at a recent meeting of the Scarborough Medical Aid Association. No doubt very much more may be said on this fertile theme, but an ordinary working day is not long enough in which to deal fully with the thousand-and-one subjects which appeal to our attention in these busy times. We can only find room on this occasion to quote the few concluding lines of our correspondent's letter:

> "There are, no doubt, allurements and fascinations about contract work for some medical men, the principal of which probably are: (1) Having patients obtained for instead of obtaining them; (2) having medical accounts paid by outsiders instead of having to apply to the patients themselves; (3) having patients more secure—or, at any rate, contract work appears to instil such a sense of security in the practitioner generally, and he is far less harassed at the prospect of losing 250 members of a club, with its equivalent let us say, of £50 per annum, than he would be in the case of a unit in private practice representing a like annual amount. Notwithstanding these concessions, however, which I am perfectly ready to grant, I still hold that almost all contract work is a loss to the profession and ought to be *limited* by those inside our profession, even if unlimited by those outside."

"RESPONSIBILITY FOR THE ADOPTION OF MEASURES OF DISINFECTION."

To the Editors of THE LANCET.

SIRS,—The case mentioned by "Physician" in THE LANCET of last week would, I think, be met by Section 120 of the Public Health Act, 1875, which reads as follows:—"Where any local authority are of opinion, on the certificate of their medical officer of health or of any other legally qualified medical practitioner, that the cleansing and disinfecting of any house or part thereof and of any articles therein likely to retain infection would tend to prevent or check infectious disease, it shall be the duty of such authority to give notice in writing to the owner or occupier of such house or part thereof requiring him to cleanse and disinfect such house or part thereof and articles within a time specified in such notice. If the person to whom notice is so given fails to comply therewith, he shall be liable to a penalty of not less than one shilling and not exceeding ten shillings for every day during which he continues to make default; and the local authority shall cause such house or part thereof and articles to be cleansed and disinfected, and may recover the expenses incurred from the owner or occupier in default in a summary manner. Where the owner or occupier of any such house or part thereof is from poverty or otherwise unable in the opinion of the local authority effectively to carry out the requirements of this section, such authority may, without enforcing such requirements on such owner or occupier, with his consent, cleanse and disinfect such house or part thereof and articles, and defray the expenses thereof." I am, Sirs, faithfully yours,

Bradford-road, Shipley, April 24th, 1893. HERBERT JONES.

AN ETHICAL QUESTION.

To the Editors of THE LANCET.

SIRS,—Taking up the ——— *Gazette* of this evening's date I find a prominent advertisement of ——— Hospital Medical School with the names of the staff printed, each member appearing in his special department. It will take a mind of very appreciative discrimination to be able to draw a distinction between the method, ostensibly adopted for the attraction of students, and the grosser forms of advertising which are supposed to be held in abhorrence by the profession generally. I am, Sirs, yours truly,

April 20th, 1893. VERITAS.

*** We agree in the main with our correspondent. Doubtless the objection, which he states with much ethical discrimination, has not occurred to those whose names are advertised for medical school purposes; but it is nevertheless a sound one.—ED. L.

THE LATE DR. WALSHE.

IN our brief notice last week of Dr. Russell Reynolds' biographical sketch of the late Dr. Walshe we omitted to mention the name of the publishers, Messrs. J. & A. Churchill.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received:—*Ayr Observer, Coventry Herald, Glasgow Evening News, Derbyshire Courier Argus (Melbourne), Lincolnshire Chronicle, the Melbourne Age, Jewish Chronicle, Leighton Buzzard Reporter, Lynn News, Eastern Daily Press, Glasgow News, Liverpool Daily Post, Birmingham Gazette, Falkirk Herald, Shields Daily Gazette, Derby Mercury, Brighton Guardian, Times of India, Pioneer Mail, Rochdale Observer, Newcastle Leader, Dundee Advertiser, Yorkshire Post, Leeds Mercury, Bristol Mercury, Local Government Chronicle, Weekly Free Press and Aberdeen Herald, City Press, Mining Journal, Reading Mercury, Surrey Advertiser, West Middlesex Standard, Local Government Journal, Hertfordshire Mercury, West Middlesex Advertiser, Colchester Mercury, Hastings News, Builder, Architect, Sunday Times, Freeman's Journal, Scottish Leader, Weekly Sun, Detroit Free Press, Croydon Observer, Scotsman, Liverpool Courier Cornish Telegraph, Hampshire Advertiser, Le Temps Paris), Newport Pagnell Gazette, Irish News, Teignmouth Post.*

Communications, Letters &c. have been received from—

A.—Dr. David Wm. Aitken, Edinburgh; Messrs. Armour and Co., London; Amethyst, London; A Sufferer; Anxious Husband; An Urban M.O.H.

B.—Dr. James Barr, Liverpool; Dr. D'Arcy Benson, Pinner; Mr. R. Brudenell Carter, London; Mr. Heather Bigg, London; Mr. C. Birchall, Liverpool; B. H. H.; Bristol General Hospital, Secretary of.

C.—Dr. Frank Clemow, London; Dr. Ernest Clarke, London; Dr. C. Cattle, Nottingham; Mr. J. H. Cooke, Tollesbunt D'Arcy; Mr. J. J. Clark, West Brighton; Messrs. Cassell and Co., London; Messrs. Carorick and Co., London; Messrs. J. and A. Churchill, London; Messrs. Crossley, Moir and Co., London.

D.—Surg.-Major D. Charles Davidson, India; M. Xavier Durazzo, Italy; Messrs. W. Dawson and Sons, London; Dundee Royal Infirmary, Secretary of.

E.—Dr. F. W. Eurich, Preston; Mr. W. G. Evans, Bath; Mr J. M. Elborough, Brighton; Mr. J. A. Eyton-Jones, Wrexham; Mr. Everett, Bath; E. L. M., Birkenhead.

G.—Mr. G. Greaves, Ardwick; Mr. H. R. Green, Southsea; Mr. S. Grose, Wilts; Mr. E. J. Gibson, London; Gloucester General Infirmary, Secretary of; Genuine.

H.—Dr. J. P. Henry, Lewisham; Dr. W. H. Howlett, Tredworth; Mr. F. R. Humphreys, London; Mr. J. Heywood, Manchester; Messrs. Hockin, Wilson and Co., London; Messrs. J. Haddon and Co., London; Messrs. Hopkinson and Co., Nottingham.

I.—Institute of Preventive Medicine, Secretary of; Ignoramus; Inquirer.

J.—Dr. D. M. Jones, Marske-by-Sea; Mr. Herbert Jones, Shipley; Mr. Fred. B. Jessett, London; J. M. D., London.

K.—Brig.-Surg.-Lt.-Col. D. F. Keegan, India.

L.—Dr. Fletcher Little, London; Mr. H. C. Ling, Keighley; Mr. F. E. Layton, Windsor; Messrs. Lee Bros. and Co., Philadelphia; Lucius, London; Liverpool Royal Infirmary, Secretary of.

M.—Dr. Thomas John Maclagan, London; Mr J. Herbert Menzies, London; Mr. N. S. Manning, Birmingham; Mr. R. Mosse, London; Miss Morice, Aberdeen; Madame A. Mudford, Naples; Messrs. Macniven and Cameron, Edinburgh; Messrs. McKesson and Robbins, New York; Messrs. Mabie, Todd and Bard, London; Medical Officer of Health, Newcastle-on-Tyne; Medicus, Newcastle; M., London.

N.—Mr. A. H. Nash, Salt Lake City.

O.—Mr. Edmund Owen, London; Mr. W. Odell, Torquay; Messrs. Oliver and Boyd, Edinburgh.

P.—Dr. Leslie Phillips, Birmingham; Dr. Ross Paterson, Stockton-on-Tees; Brig.-Surg. Robert Pringle, Blackheath; Mr. Charles Perks, Burton-on-Trent; Mr. W. Paulson, Loughborough; Mr. H. H. L. Patch, London; Messrs. Parke, Davis and Co., London; Messrs. Pimms and Co., London.

R.—Dr. M. A. Ruffer, London; Mr. Alex. Robertson, Thirsk; Mr. J. Rogerson, Hamilton, N.B.; Mrs. Roe, Brentford; Reginaris Co., London, Assistant Secretary of; Royal Hospital for Women and Children, London, Secretary of.

S.—Dr. J. A. Shaw-Mackenzie, London; Mr. Clement H. Sers; Mr. A. Stuart, Newcastle; Mr. W. Ernely Sumpter, Norfolk; Messrs. Smith, Elder and Co., London; Messrs. W. H Smith and Son, Manchester; Messrs. G. and G. Stern, London; Sanitary Wood Wool Co., London, Secretary of; Borough of Sheffield, Town Clerk of.

T.—Dr. Geoffrey W. Thompson, London; Dr. H. Tibbits, London; Dr. W. A. Turner, London; Dr. D. F. D. Turner, Arley Castle; Dr. W. J. Tivy, Clifton.

V.—Veritas.

W.—Dr. J. W. Watterson, Morecambe; Miss C. J. Wood, London; Messrs. Whitworth and Stuart, Manchester; Messrs. Woods and Co., Adelaide.

Letters, each with enclosure, are also acknowledged from—

A.—Mr. S. W. Abbott, Boston, U.S.A.; A.W.R., London; Alpha, Bridport.

B.—Mr. G. K. S. Bigg, London; Mr. G. R. Bonsall, Aberystwith; Messrs. Blondeau et Cie., London; Bladud, London; Basil, London; Branch, London.

C.—Dr. T. C. Craig, Cramlington; Mr. H. Chestnut, Tralee; Mr. J. Clegg, Manchester; Mr. J. H. Capron, London; Mr. G. Carter, Ilkley; Messrs. Chitty, Richmond; C. J. P., Newcastle-on-Tyne; Church Stretton Private Asylum, Medical Superintendent of; C. J. H., London; Cantab., London; Curator, London; Class Rooms, Edinburgh.

D.—Mr. A. Denman, Beaconsfield; D., Leeds.

E.—Dr. F. L. Ehrke, Great Malvern; Dr D. G. Evans, Llanerchymedd; Mr. A. J. Edge, London; Eldred, London; E. S., London.

F.—Mr. J. K. Frost, Kingstone; Mr. C. Fage, Taunton; Mr. E. D. Fitzgerald, Folkestone; Miss Fitt, Winchester; F. A., London.

G.—Mr. W. Gilyard, Bradford; G., London; Miss G., Easingwold; G. K. H., London; 46, Great Ormond-street.

H.—Dr. G. Harley, London; Dr. Harley, Wellingborough; Dr. G. Herschell, London; Mr. H. B. Hayes, Pontypool; Mr J. A. Hughes, Holyweli; Mr. R. Hingston, Liskeard.

I.—Invalid Transport Corps.

J.—Mr. F. F. Jones, Llanfyllin; Madame G Jinks, London; J., London; St. John Ambulance Association, Superintendent of; Jersy, London; Junius, London; J. P. M., Bletchingley.

K.—Mr. K. Knott, Hastings; Mr. F. Knapton, Chichester; Mr. J. E. Key, Cradley Heath; Mr. Kynaston, Brighton.

L.—Dr. W. M Leslie, London; Mons. A. Lonette, Paris; L. W., Penge; Locum, Scarborough.

M.—Dr. D. Murray, Brora; Dr. J. Murphy, Sunderland; Mr. S. B. Mason, Pontypool; Manchester Southern Hospital, Secretary of; M.B., London; Medicus, Ramsgate; M. G. E., London; M.D., London; Medico, Edinburgh; M.R.C.S., London.

N.—Mr. W. H. Netherclift, Canterbury; Nucleus, London; Nottingham General Hospital, Secretary of.

O.—Mr. T. J. Owen, St. David's; Optimist, London; Owner, London.

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